

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, President
E. J. MEHREN, Vice-President

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

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Twenty-two Cents per Ton

AN IMPORTANT metal-mining company, Alaska Juneau Gold Mining Co., mined last year 3,068,190 tons of ore and fine-milled 1,367,528 tons of it. Its mining cost was 22½c. per ton. That is surely some record! Of course, the rock is brought down with little regard to size—the smaller, in fact, the better. One reason why the costs are low is because the tonnage is large. It has been raised to 9,520 tons daily, and it is proposed to increase it to 14,000 tons, thus reducing overhead. The company, it is true, is not paying dividends, but put \$90,000 away as surplus. How does it do it? It shows what can be done where labor conditions are favorable and good management prevails. Nor is the profit made by skinning labor, for the average wage of the 476 men was \$5.26 per day.

It may be added also that the Alaska Juneau is a real mine and not a stripping. The rock in it is hard to drill and pitches like anthracite. F. W. Bradley is president and P. R. Bradley, consulting engineer. The Bradley brothers have erected a monument for themselves along the still waters of the Gastineau Channel. It is a challenge to the coal industry.

Some are disposed to believe that heavily pitching seams are a distinct advantage in mining, provided that roof and floor conditions are favorable.

Attempts something new, but, alas, too often with most of us it means some one of experience who wouldn't try anything original if he knew he was doing it. These difficult days can be faced safely only with an expert of the kind who dares to be original. Those experts who are men of experience only and make an application of something old, will find that there is no hope in such expertness. No wonder there is a disposition, at times, to look for guidance to men outside the industry who will make a precedent rather than hunt one.

College for Retailers

ONE WONDERS, sometimes, that no college seems prepared to give a course on the geography, geology, chemistry, marketing, and combustion of coal. The first four studies could be taken with the regular mining engineering students and the last with the mechanical engineering classes. This kind of elective study could be made into a post-graduate course, with the title of fuel engineer, or it could be given without any previous instruction, with a mere certificate as evidence of this scholastic training.

A student in North Carolina writes asking where such instruction is available. Surely it should not be necessary to answer the question with the word, "Nowhere." Here is an opportunity for some college to render a notable service. Many people want to learn about the marketing of coal who are utterly indifferent to the mechanical and electrical details of mining. However, they should know enough of the conditions of mining and preparation to understand just what causes coal of inferior quality to appear at the retailer's dock. A course in business and management would round out the instruction, making a year most profitably spent. Unless, however, a course on yard management and design, one on advertising and a third on domestic furnace combustion were added, the training would be incomplete in its most immediate and most practical aspects.

The World Changes But Laws Remain

IN EUROPE they tell of military guards still doing duty years and years after the need for the protection has disappeared. As for our safety laws, we have to look them over every once in a while to make sure that they are directed at a fear rather than a danger and to ascertain where they are not themselves a hazard. Years ago mines were ventilated by shifting winds, by the warmth of the earth, the heat of a furnace, the action of falling water or the ascent of steam, and during those times we made laws relating to ventilation, among others those prescribing the distance between crosscuts.

But now we have fans and flexible tubes to carry air into distant points without a connection to a return airway, but we don't permit an entry to be driven unless it has a crosscut every so often. In some states

Broadening from Precedent to Precedent

HENRY FORD has never had any regard for the expert—the man who knows mainly how others do it. He does not want a man who has a mind like a lawyer, whose idea is that everything shall be done in accord with precedent. When you ask him if you may do this or that, the limb of the law hunts his cases. "No," he says, "it was decided in Trimble vs. The High Candle-Power Gas Co. that it can't be done." It ends with a "no-thoroughfare" sign.

Of course, within certain bounds the duty of the lawyer is to rely on his cases. But engineers should have a freshness of mind. They should not rely on the past too much, for some of the past is really past and no longer present in any sense of the word. For thousands of years man has tried to fly. It couldn't be done. The expert mechanical engineer said so. But, meanwhile, by slow advances the low-pressure steam engine was laying the ground for the high-pressure engine and that for the oil engine. That cumbrous, awkward machine was being made light and one day flying came. True, mining is not flying. Nevertheless, even in mining, conditions change rapidly and what we couldn't do ten years ago, with the state of the art as it was, we may be able to do today by reason of improvements made since that time.

If our Latinity is not at fault, the word "expert" originally means some one who tries, essays, finds or

where the mine air used to be extremely bad the pillars have to be so riddled that little is left of them. Then again the pillar has to be made small so that the required riddling of it is not too expensive an operation. And again, as the driving of crosscuts is so expensive less headings are driven, and as the stoppage of so many crosscuts is costly it is not done as well as it should be, and even if done well the multiplied chances for leakage make the loss of air considerable with the result that the ventilation current is wasted.

It is good to learn that in the State of Washington crosscuts between headings—"dump chutes between gangway and counter gangway," they term them—are set 300 ft. apart so as to protect the roadway and airway from deterioration. Let it be remembered this is not done for economy. The crosscuts or chutes eventually have to be constructed at quite usual centers, but they are not made earlier because of their ill-effect on the gangway in which they are used.

It would seem well to allow a greater latitude in the placing of crosscuts where adequate ventilating equipment is provided. As a matter of fact, sixty or ninety feet plus the fifteen or so feet in the half crosscut often is too far without artificial ventilation, so that the requirement of a fan and a flexible or other pipe would be an advance and not a retrogression.

What Must Not Be Said

IN THE discussion page, Edward Steidle, takes issue with an editorial on the open and the electric cap lamp. He says, "It is unpardonable to use open lights in any bituminous coal mine which has ever produced the slightest trace of gas, and any bituminous mine may produce gas in explosive quantities." In reply it may be said there are many mines that never have produced enough gas to elongate a flame or cause an explosion. Mr. Steidle may not have visited such mines, for his experience has been with the U. S. Bureau of Mines, which, most meritoriously, has mainly interested itself with dangerous workings and with the Carnegie Institute of Technology, which is located in a field where gaseous mines are almost universal.

He is quite right in saying that there are many "so-called" non-gaseous mines and that, in these, gas ignitions occur, but what a perversion of fact it is to say that the ignitions in "so-called" non-gaseous mines are, or course, the common cause of practically all coal-dust explosions. But granted it were true, the editorial did not say that cap lamps should not be used, but that whenever they were used other conditions of safety must be required, and if stringent insistence was not placed on them the risks would be greater, for the evidences of danger would be removed. The editorial stated that if the other precautions were not taken, the mere provision of safe lighting would not remove the dangers of smoking, unsafe shooting and non-permissible machines.

Coal dust, Mr. Steidle says, can be ignited by an open light. It can be even exploded by that means, but does he know an instance where it occurred? However, though he has not brought any such evidence, and we know of none, it would be bold, indeed, to deny he has made a point. It could happen, and may have happened; who knows? As for the Sullivan mine being a "shining example of the fallacy of using open lights," we confess that we do not know what caused the explosion at Sullivan. No one does, not even the coroner's jury,

unless it be Hubert Work, of the Department of the Interior. He would be a bold man, indeed, who would say that a flame lamp was not the cause. It might have been a shot, an arc or a premature explosion of powder. No one knows, so why make so unqualified an assertion?

Let us not hide from ourselves the fact that it is no less horrible to be blown to death by an explosion caused by an arc or a shot than by one resulting from an open flame. When cap lamps go into a mine, strict rules, stringently enforced, flame safety lamps, fire-bosses, permissible powder and permissible machines should go there also. That is all that has been alleged. "If this be treason, make the most of it."

The Bigger the Inclosed Area

The Less Disastrous the Fire

TO ISOLATE a mine fire in the mistaken idea that it will thereby have less area over which to range is a great mistake. The area shut in usually should be as large as can be arranged, and this despite the fact that when a large area is closed a large quantity of combustible air is immured with the fire. True, sometimes where the area is underlaid by light cover the larger area may cause the fire to receive more air from the surface. True, also, it is, that if the area is so large that a great number of stoppings have to be built to isolate it, much damage and many explosions may occur before it is closed off, and perhaps it never will be wholly shut in because so many stoppings and a little leakage at each will be enough to keep the fire alive. Furthermore, a big isolated area may cut off the working parts of the mine and make operation impossible or difficult.

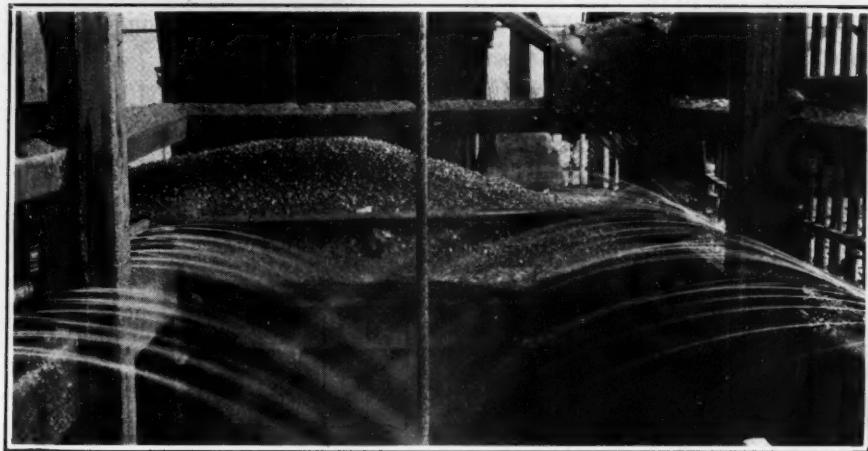
However, with these exceptions, when they are justly taken, the area isolated should be as large as possible because the main requirement is that the average heat of the inclosed working be low. A large isolated area will have a low average heat. Consequently, when it cools it will not cool as many degrees as a small isolated area containing the same quantity of fire. This will result in the vacuum caused by cooling being reduced. With only a trifling reduction in pressure within the area it will be easier to keep down the inleakage of air, provided the number of openings to be sealed is not too great.

Last week Simon H. Ash explained how in the Newcastle region of northwestern Washington the black-damp is stored behind stoppings which are provided with pipes by which it can be led to places with incipient fires. Speed in checking a fire is most important. If a fire is allowed to gain heat, the vacuum will be just so much the greater and the tighter must be the stoppings. In fact, as stoppings are quite generally ineffective when the difference of pressure is great, and as the only safe way to put out the fire is to furnish inert gas to balance the pressure, the bigger the fire the greater the quantity of inert gas needed. And moreover, not only does the cooling have to proceed further but it goes more slowly when the area inclosed is small.

Where an attempt is made to close off the fire at close quarters the placing of stoppings is slow and likely to be ineffective. The stopping, subjected to considerable heat, is not only built poorly but is likely to be damaged by the high temperature. It would appear far better to put stoppings so far back from the fire that erection will be safer, easier and more rapid.

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Though the Bethlehem Mines Corporation Is Rock-Dusting Its Coal Mines It Had Not So Treated the Mine in Which the Explosion Occurred.



This Illustration Shows the Method of Keeping the Shaft Wet. At This Point the Recent Mine Explosion Showed Its Greatest Violence.

Nobody Knows Cause of Barrackville Mine Blast

Thirty-Six Men Testify at Coroner's Inquest—Some Hold Bomb Theory but Bureau of Mines Is Against It—Investigation Will Continue—Four Discharged Miners Are Still Held on Suspicion

By Alphonse F. Brosky
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

NO CAUSE for the explosion which wrecked the Barrackville, W. Va., mine of the Bethlehem Mines Corporation has been determined. Thirty-six witnesses were heard at a coroner's inquest in Fairmont, W. Va., March 27 and 28, including representatives of the U. S. Bureau of Mines, the West Virginia State Department of Mines and the company, who had made three separate investigations following the blast of March 17; but no decision was possible and the coroner's jury did not return a verdict. A continued inquest will be held. Meantime, state and company men are still trying to solve the mystery, while four discharged miners are under arrest, suspected of having dropped or planted a bomb in the mine.

Much evidence, including that of J. W. Paul, chief of coal mining investigations for the Bureau of Mines, was against the bomb theory. It was contended that the condition of the mine indicated the explosion started several hundred feet from the bottom of the shaft. Dust participated largely in the spread of the blast, though a state inspector said the company had been devoting much attention to safety.

MINES NOT ROCK DUSTED

It was hinted by Robert M. Lambie, chief of the Department of Mines of West Virginia, and as much as admitted by J. O. Durkee, chief inspector of the company, that the explosion would have been confined to a small area surrounding its origin had the mine been rock dusted. While examining the latter Mr. Lambie remarked, "Are not many mines advocating rock dusting to prevent explosions?" To this question Mr. Durkee replied, "Yes; so am I." Two of the Pennsylvania mines of his company have already been rock dusted.

In his attempt to bring to light the circumstances entering into the explosion, Governor Gore requested Hubert Work, Secretary of the Interior, to permit two members of the U. S. Bureau of Mines to give the coroner at the inquest the results of their investigation. This unusual request was granted by Dr. Work.

Two theories as to the cause and origin of the explosion were advanced, but even those who agreed in the main are at variance as to details. One opinion, maintained rather generally by company officials who testified, is that the explosion was caused by a charge of explosive planted in the hoisting shaft. The other theory, which is advanced by George S. Rice, chief mining engineer of the U. S. Bureau of Mines, and state mine inspectors, declares the explosion to be probably due to some natural cause the origin of which was somewhere inside the mine.

CONCLUSIVE EVIDENCE LACKING

Mr. Paul accounted for many of the manifestations of the explosion without venturing an opinion pinning down the source. The lack of vital evidence was apparent at every stage of the inquest. Much time may be required to prove or disprove the company's theory, because of the débris at the bottom of the shaft. Those who think the explosion was an accident and not a crime are hampered in discovering the source of the explosion by reason of the great extent of the mine workings.

The witnesses included, in addition to those already indicated, a number of men employed by the company (chiefly those in the Barrackville mine), a few who assisted in the exploration work and one outsider who happened on the scene shortly after the explosion had taken place.

Because this mine is highly gaseous and its coal dust dangerous, the company took unusual pains to make it safe. Prior to the explosion the dangerous natural conditions in this mine and several others in the district were recognized by Chief Lambie, who directed the supervising state inspector to make more frequent inspections of these than he did of the others. The mine foreman and one assistant for each of the four working sections supervised the mine during the day. The night shift, of course, was directed by a foreman. A fireboss was employed in each of the sections and

fireboss runs were made every day in the year including Sundays. In addition to these precautions a safety boss was employed and also a company district inspector who divided his time between this mine and several others in West Virginia belonging to the company. Further authority was vested in a chief company inspector. Seven shotfirers had complete control of shooting.

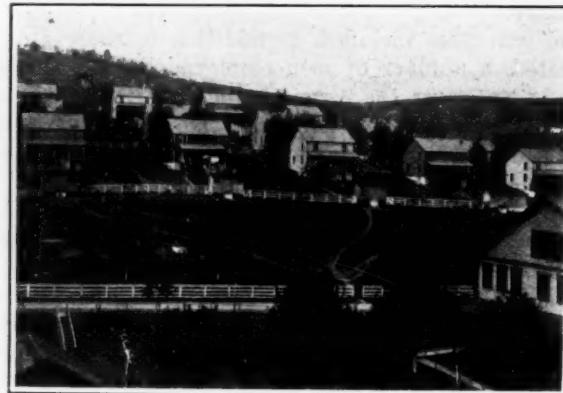
MANY PRECAUTIONS TAKEN

The safety boss made continual inspections in all parts of the mine, examining for gas, caring for ventilation and watching for dangerous practices. Abandoned areas and goaf lines were inspected at regular intervals for accumulations of gas, which, it was reported, were never found in dangerous quantities, because of careful ventilation. Abandoned sections were analyzed weekly. Air splits were analyzed regularly. An attempt was made to keep the methane content in the fan exhaust below 0.35 per cent. Machine crews were furnished flame safety lamps with which they were instructed to examine for gas at the face before advancing their machines beyond the last crosscut.

The certified shotfirers charged, tamped and shot the holes. Slow-acting permissible powder, no more than five sticks, or $1\frac{1}{2}$ lb., per hole, was fired by detonators and a battery. Three holes were utilized in the shooting of a place, the center shot being fired before those of the two rib holes. A close check of all explosives used was kept by the company. Miners carried their own powder into the mine. The number of sticks taken from the magazine, the number returned and the number used were carefully recorded. Detonators were handled only by the shotfirers. Not only did these men examine for gas but they also examined fireboss reports before starting their work. All men were searched for matches and other contraband articles before going inby from the bottom cage landing.

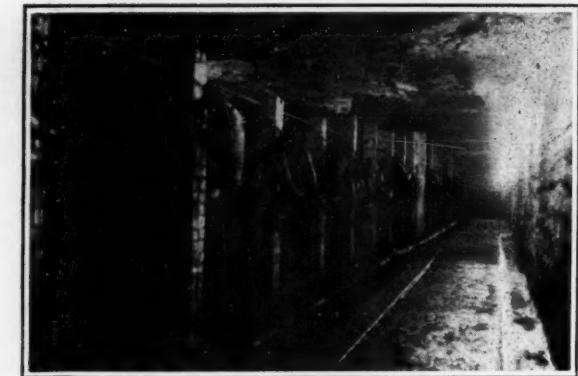
CUTTING MACHINES NOT BLAMED

The committee on investigation could not find the slightest evidence in the vicinity of cutting machines to lead them to suppose that the latter might have been the agent of ignition. A machine on 19 right off the main north face heading was discovered in a sumping-out position and the cable detached. Another in 15 right of the same section was located in a sumping-in position, but actual cutting had not commenced. Other machines were seen in positions not likely to have been



Barrackville Village with Store on Right

This little town was as carefully maintained as the mine below it, a bright spot in a smiling farm country.



Underground Barn Where Thirty-Six Horses Died

Stable near shaft bottom of Mine No. 41. Large horses are used for gathering coal from the working places. All were found dead after the explosion.

dangerous at the time of the explosion. Several were apparently traversing the entries when the explosion occurred.

Horses gathered the coal from working places, hauling it to side tracks, where it was picked up by trolley locomotives and trammed to the shaft bottom. Feed wires were never extended beyond the last crosscut, nor was the practice of extending them into rooms permitted.

MINE WELL VENTILATED

It is estimated that the Barrackville mine liberates about a million cubic feet of gas daily. For this reason one of two fans is operated night and day at full speed. Breaks in the roof liberate gas coming from upper measures, but most of the gas comes from the slips of the coal. Cuts through clay veins often open up blowers which liberate quantities of gas. One was discovered by the investigation at the head of No. 3 intake entry of the main north face headings, but was not considered dangerous. The practice of brushing out gas accumulations from the faces was not tolerated. Such accumulations were reported to the section bosses, who had them removed by shunting air to the face with a line of brattice. Gob fires had been unknown in this mine under the management of this company.

No indications of a blownout shot were discovered anywhere. At one of the faces a shotfirer was found in the position which he had assumed while in the act of tamping a hole.

SPRINKLING USED EXTENSIVELY

Loaded and empty cars were wetted down by an overhead sprinkling arrangement before starting for their respective destinations. Water lines of 6-in. diameter lay on the main entries. Hose had been used for washing down the ribs and roof. Spray jets which ejected a mist of water into the seven air splits were employed to increase the moisture content of the air. These sprays were used chiefly on the returns of each set of face headings. Water cars also were used. No fixed rules were established governing the frequency of wetting down the coal dust. This matter was left to the discretion of the bosses, who were instructed to keep their sections safe regardless of cost. Coal dust was loaded out when dangerous accumulations became discernible.

Three company men testified that they believed the explosion started from the shaft bottom. William Berry, the mine foreman, declared that he so believed

because the damage on the surface was far greater than in the mine and was greater in the main shaft than in the man or fan shafts. His contentions were backed up by Mr. Durkee, of the company, who went one step farther by laying the cause to the setting off of explosive either at the bottom or at the top of the hoisting shaft. He expressed his suspicion that the charge was located at the top of the shaft, because a corner of the concrete collar had been torn out by the explosion. However, other witnesses presented contradictory theories as to this.

Mr. Paul declared he had never heard of an explosion being initiated on the outside of a mine. A number of attempts have been made at the federal experimental mine, Bruceton, Pa., to do this, but all have failed. He believed the origin must have been 300 to 400 ft. inside in order that sufficient pressure be developed to stir up coal dust which in turn was fed to the flame. Mr. Paul thought the concrete corner might have contained a fracture and that the concrete slug did not have to be broken loose but might have been merely lifted by timbers dislodged during the explosion.

BELIEVES BLAST TRAVELED INBY

Mr. Durkee informed the jury that his observations led him to believe that the explosion traveled in a general direction inby of the hoisting shaft. First he pointed to the fact that the fan and man shafts were little disturbed. Overcasts on the north and south headings were blown inby, and the covers of the locomotive on the shaft bottom were blown in the same direction, according to Mr. Durkee. He was willing to admit, however, that coal dust played a big part in the explosion. When questioned by Chief Lambie he stated that high-velocity air currents, such as are forced into this mine, quickly dry up coal dust in cold weather. C. W. Welty, company division inspector, who, incidentally, completed a five-day inspection of the mine on the day of the explosion and found it safe, expressed practically the same opinions as Mr. Durkee. This witness observed that most of the stoppings were blown toward the returns.

In all his thirty-eight years' experience in coal-mine engineering, which took him to many mine explosions, Mr. Rice declared that he had never before seen so much violence on the surface as was displayed by the Barrackville explosion. The heavy thrust up the shaft

must have lifted the headframe 18 in. from its base. He explained this violence by the fact that the downcast is close to the tipple, where coal dust in large quantities is released, to be carried down the shaft and deposited on the shaft timbers. He is not of the opinion that coal dust dislodged from the tipple simultaneously with the explosion played any great part in the unusual violence on the surface. Nor does he believe the explosion started either at the top or bottom of the shaft. The large quantity of coal dust on the timbers might easily have developed a pressure of 100 lb. or more per square inch. Such pressures have been approached in the federal experimental mine.

COAL DUST EXTENDS EXPLOSION

He contends the explosion originated at least 1,000 ft. inby from the hoisting shaft. The principal medium of propagation from point to point was coal dust. He found evidence of heat manifested through caking and coking and burnt fragments of brattice cloth. In the main west butt entry he observed conflicting evidence of physical forces which showed signs of movement in two directions from a point about midway in the entry.

H. S. Lively, counsel for the company, remarked that an explosion was started not far from the shaft bottom of the Summerlee mine (West Virginia), where a box of dynamite was used to bring down sets of timbers. This explosion traveled throughout the mine. It was stated, however, that the Summerlee shaft is 600 ft. deep; also that the explosion started 100 ft. from the shaft. This, it was declared, permitted the development of a high pressure.

William German, a technical representative of a powder company, was asked if the setting off of a charge of powder would cause shattering of the coal surfaces near it. He replied, "Not if placed in the open." He classified as permissible the powder which was used in this mine.

FAN DOORS OPENED AND WEDGED

Earl Wheelan, blacksmith, described the condition of the fan after the explosion. The doors on the electrically driven fan were opened and wedged. The sides of the steam-fan housing were drawn in about 3 in., interfering with the revolving of the blades.

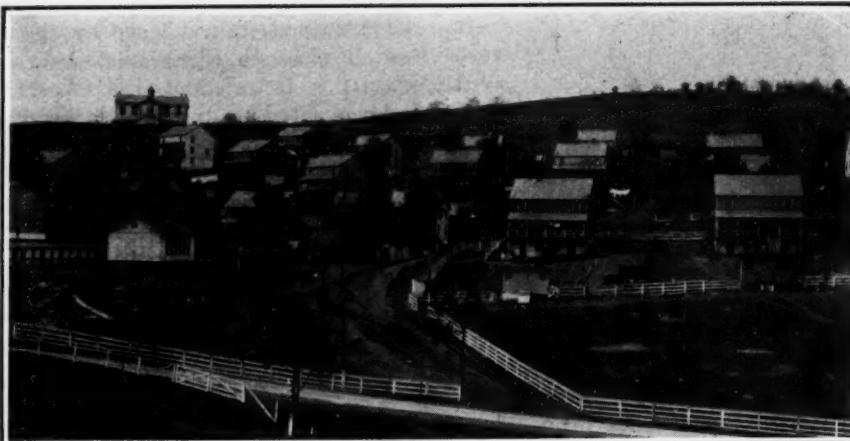
The sucking in of the sides of the steam fan was explained by Mr. Paul as due to the creation of a

Another View of the Company Store Seen in Preceding Illustration of Barrackville Village.



This Store Building Serves Also to House the Office of the Bethlehem Mines Corporation.

Barrackville, Marion County, West Virginia. The Village Is Located on Buffalo Creek, Which Joins the Tygart Branch of the Monongahela River Just Below Fairmont.



Despite its Grim History, Barrackville Is a Cheery Little Village with a Comfortable Home Life. Note the School on the Hilltop and the Row of Garages on the Left.

vortex, a phenomenon of explosions in which a partial vacuum is established. A vortex has been established in the U. S. experimental mine which drew in heavy concrete lining from a section of the testing gallery.

The mine was inspected by State Inspector W. B. Riggelman, on March 2 to 5. He was a member of the investigation committee. Mr. Riggelman laid great emphasis on the accumulation of fine coal dust on a long stretch of timbers on the main west butt intake as a possible origin of the explosion. These timbers are located between 2 and 4 north face entries off the butt. Where the timbers were erected the roof is quite high. Consequently I-beams placed on 10x12-in. white-oak legs were lagged with 3-in. planks. The legs were tied together with stringers. Above this landing was erected cribbing construction which extended to the roof. These timbers were favorable for the accumulation of large quantities of fine coal dust. To one of the ribs was fastened a feed wire, and suspended from hangers was strung the trolley wire.

ARC OF TROLLEY MIGHT BE CAUSE

He thinks that a fall of roof may have tripped one of the timber sets, causing the trolley to arc and at the same time releasing a cloud of coal dust as fine as 200-mesh. He was positive that the explosion was extended throughout the mine by the coal dust. In the main west butt split a volume of 77,000 cu.ft. of air was certain to keep the coal dust dangerously dry.

The manifestations of the explosion from this timbered section moved inby and outby. He found no evidence of fusing on either steel or copper. These were buried by falls so that a careful examination could not be made. Had not the large accumulation of coal dust been present in the hoisting shaft he believes the degrees of violence in the three shafts would not have been so widely different. However, the hoisting shaft is nearer than the others to the timbered section.

Like several other witnesses, he feels that the violence on the surface may have been aggravated by the cloud of coal dust brushed from the headframe and tipple structure by a pioneer wave of the explosion. Nor does he doubt that the explosion could have originated either at the top or bottom of the hoisting shaft.

Tom Jarrett, another state inspector, also sees possibilities in the establishment of the source of the explosion in the main west butt heading. He reasons as does Mr. Riggelman, except that he blames the ignition on an arc from the feed wire, one section of which was found by him to be broken and unraveled.

In his testimony, J. W. Paul gave his conclusions,

which were that unmistakable evidence existed that coal dust played a major part in the explosion. He saw evidence of mechanical forces in two directions, but he intimated that this is not unusual in explosions. This characteristic is caused sometimes by boosting pressures. In its experiments the U. S. Bureau of Mines has proved that the pressures of an explosion traveling at the rate of 2,000 ft. per second may dislodge fresh coal dust, which feeds the flame and boosts the pressure almost instantly at any point. In that event the mechanical forces may point in two directions. In the experimental mine high boosting pressures are known to have destroyed heavy concrete and in one case to have blown a hole through 15 ft. of overlying strata. The two-way paths taken at boosting points confuse investigators in tracing the origin of the explosion.

He believes the timbered section on the main west butt was a boosting point, in that no evidence of charred coal dust was found there. The absence of charred coal dust is generally an indication of the seat of an explosion. Mr. Paul suggested, however, that further investigation be made at this point.

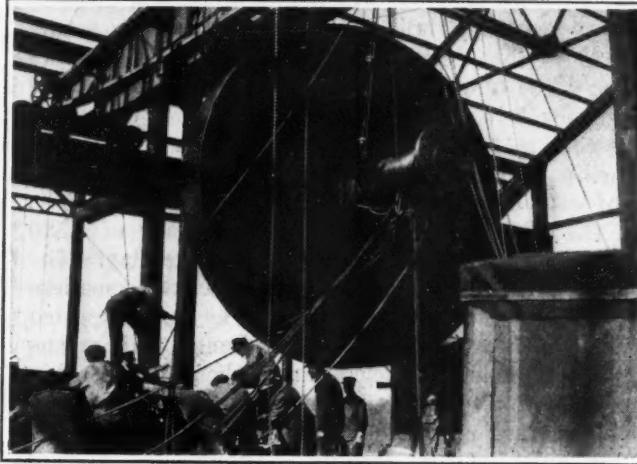
Freshly made coal dust is more violent than that which is aged. To an extent this knowledge might account for the violence in the shaft, where fresh coal dust from the cages and tipple settled.

SPRINKLING PROVED INADEQUATE

A preponderance of his observations point to a general movement of the explosion outby. He expressed apprehension as to the methods used in guarding against the dangers of coal dust in this mine. The degree to which this dust was watered was not sufficient as the explosion has proved. Coal dust may be safe when it contains 25 per cent moisture and can be molded by the pressure of the hand, but it is difficult to keep that much water in the dust, and one can never be certain that any such quantity will be present.

Several of the witnesses, among whom were two men who have had experience in shooting wells with high explosives, claimed they smelled a "sickly sweet" odor for some time after the explosion, attributing it to fumes of nitroglycerine. Little credence was given to this testimony, it being generally thought that the oil drillers confused the smell with afterdamp which they had never encountered prior to the explosion. On the strength of this personal conviction on the part of these men, four miners who had been hired a few days before the explosion and who had left the mine a short time before it occurred were held by law on suspicion.

Huge New Hoist At Orient Raises 13 Tons Of Coal per Trip



Big Job In Hoist House

Although the Most Powerful in This Country and Built for Fast Service, It Has Been Found Possible to Safeguard It Amply — Auxiliary Hoist Has Flexible Power Service

By Delbert Kay

Milwaukee, Wis.

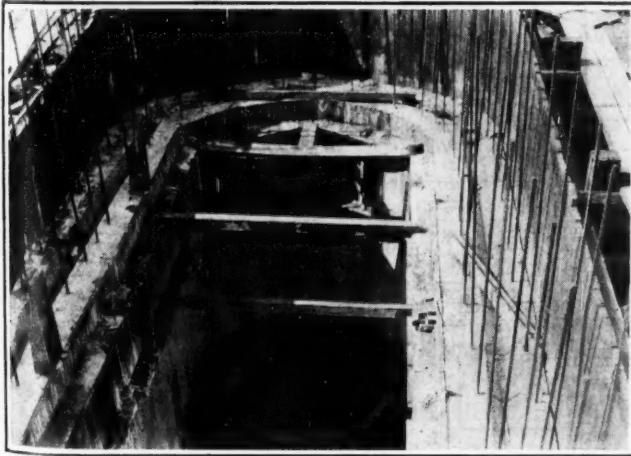
ONE OF THE outstanding features of the New Orient mine, is its hoisting equipment. Production of coal on so large a scale as that operation has in mind involves the solution of many unusual problems, one of which is the provision of hoisting facilities to handle that tonnage quickly and at the same time economically. Two hoists have been installed: a main hoist for coal only and an auxiliary hoist for men and material, but this latter hoist, if occasion demands, can be used for the raising of coal also. Both hoists are electrically driven.

NOTE—The 95,000-lb. flywheel for the motor generator, shown in the headpiece, is set to serve the main hoist—the biggest coal hoist in the world. It is one of the ear marks of greatness at Orient No. 2. But it also added its troubles by its very size. Shipping it on a flat car was one task. Unloading it was another; but the mine builders were equal to it. They laid the foundations for this machinery, hauled it right to its final resting place on railroad cars, set it in place and then built the building around it.

The main hoist is the highest powered electric coal hoist in the world. It is of the two-motor type, i.e., a motor of 2,200-hp. capacity is located on either side of the drum and connected to the drum shaft by means of flanged couplings.

Prior to the installation of this hoist, the largest coal hoist in this country was one having a motor capacity of 2,200 hp., although in metal-mine service there are hoists in operation with single motors of as much as 2,400 hp. The two 2,200-hp. motors of the New Orient machine are of direct-current type and operate at a maximum speed of 75.42 r.p.m.

Aside from the feature of motor capacity, this hoist is also outstanding in the fact that the cylindro-conical drum is the largest ever built for coal-mine service in America. The total hoisting depth is 607 ft., and in order to produce a large tonnage quickly an unusually



Shaft-Sinking Construction at New Orient

This illustrates the round-end shape of the shaft—built thus for strength—and the sort of reinforcement that was used in the concrete lining. Each section of concrete is grooved to receive the next. The tube to be seen in the lower foreground is part of a caisson that was carried down with the sinking so that it could be used in case sand or water made it necessary to work under air pressure. But, fortunately, no air locks were necessary.



When the Shaft Lining Began to Tip

Sinking the concrete lining to the New Orient main shaft was not all skittles and ale. There were some real difficulties. When the sinking shoe had reached 80 ft. it was discovered that the great concrete tube had slipped 18 in. out of plumb. An immense load of steel rails and I-beams was piled on the edge of the collar, and an excavation 40 ft. deep was made on that side of the shaft with a clamshell, while the sinking went on. Proper alignment was soon attained.

large drum was required. The smaller diameter of this drum is 10 ft. from which this dimension rises in one-foot steps until the larger diameter is reached, which is 17 ft. With this drum a maximum winding speed of 4,000 ft. per minute is obtained. The drum is grooved for 2-in. rope.

The coal is loaded in skips which run in balance. Each skip weighs 17,000 lb. and carries a maximum load of coal of 26,000 lb., the average being 22,000. When the mine is fully developed a tonnage of 1,520 tons an hour is desired, or 12,000 tons per day. The surprising feature of this hoist, when one considers its size, is its rapidity in operation, as it is expected to hoist at a rate of 138.5 trips per hour. This means a very rapid hoisting cycle. From the time the skip leaves the bottom, until the dumping position is reached, only 17 sec. are required with a resting period of 10 sec. for dumping and loading. Though the normal capacity is supposed to be about 1,500 tons an hour, it is expected that under maximum conditions a capacity of 2,000 tons per hour can be reached.

EFFICIENT BRAKING EQUIPMENT

One of the prime essentials of a hoist of this size is adequate braking facilities. Handling a large tonnage at so high a speed necessitates rapid retardation and this is accomplished by means of two parallel-motion post-type brakes of Nordberg design. Two brakes are provided; one on either end of the drum, being 11 ft. in diameter and of 17 in. face. These brakes are operated by means of hydraulic thrust cylinders and are set by gravity weights. Oil under pressure for brake operation is provided by an accumulator which is equipped with duplicate motor-driven pumps, one to be used as a spare in case the other should fail.

An electrical safety device has been developed to function in connection with the brakes and this shuts off the current to the hoist and applies the brakes in case of excessive wear of the brake shoes, and before they have worn enough to prevent their proper functioning. This assures proper brake adjustment being maintained at all times.

Special provisions have also been made to assure

absolute safety against any contingency which may arise. The built-in safety device shuts off the current and applies the brake for any of the following causes: (1) When hoisting speed exceeds normal at any point. (2) If operator fails to slow down the hoist at the proper point before the landing level is reached. This would cover the contingency of the operator failing, for any reason, to finish his job after once having started the hoist either up or down. (3) In case of overwind. (4) If the operator should fail to reverse after having reached the landing level. (5) If the power should go off the line for any reason.

LARGE OPERATIONS NEED BIG HOISTS

A few years ago, it was not thought practicable to build electrical hoists of this capacity, but with the present-day trend toward larger operation and with the development and improvement in electrical equipment, it is only natural to presume that such large hoisting equipment will be more generally used in the future.

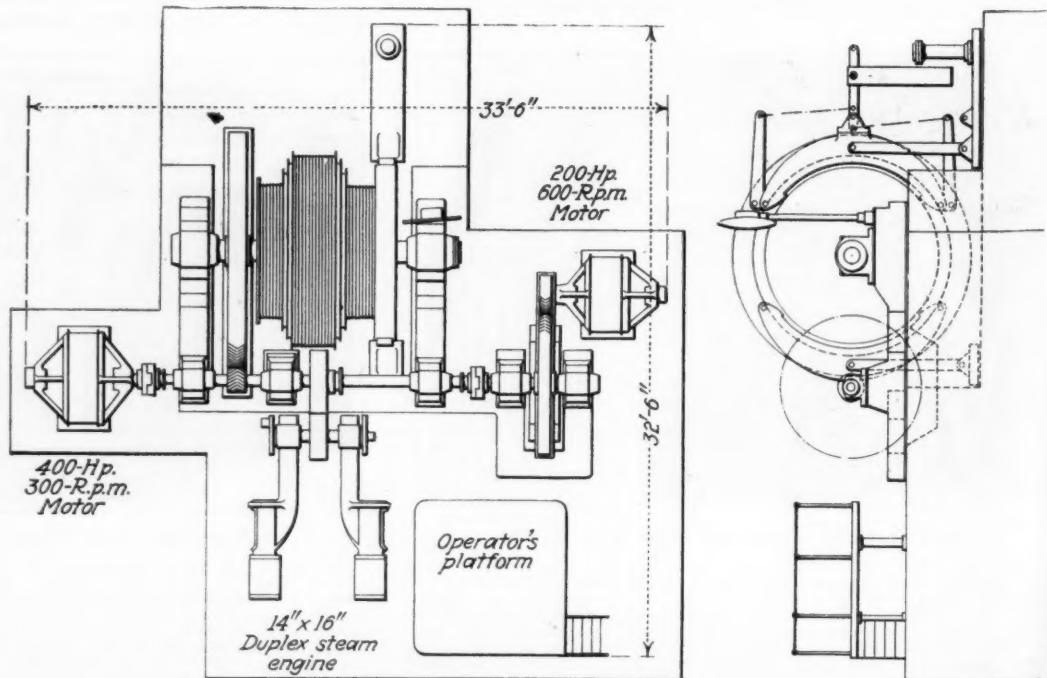
The auxiliary hoist for men and material, as previously stated, is arranged also to hoist coal if an occasion should arise where this would be necessary. This machine is arranged to hoist coal in cars, instead of skips; a conveyor system being connected from this shaft to the main shaft, over which the coal is carried, so as to pass the screens in the regular manner.

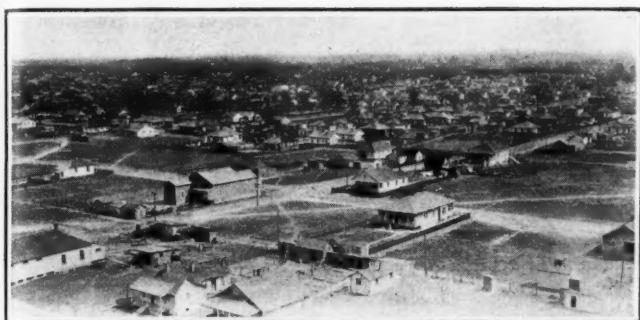
This hoist also is of the cylindro-conical drum type, the smaller diameter being 7 ft. and the larger diameter 10 ft. It is grooved for a 1½-in. rope. It is arranged for two speeds of operation, being driven by two motors. For fast hoisting during the day period a 400-hp. 300-r.p.m. motor is used. It drives the hoist through a single-reduction gear. At nights a 200-hp. 600-r.p.m. motor is used driving through a double-reduction gear.

Both of these motors are engaged by means of jaw clutches, which can easily be thrown out when a change is desired from either method of hoisting. The smaller motor is used primarily to reduce the current consumption during the period when rapid hoisting is not an essential feature. For rapid hoisting the cycle covers 50 sec. with 10 sec. rest, whereas with the same rest period and slow hoisting 88 sec. are required.

Auxiliary Hoist At New Orient

This flexible equipment enables the mine to operate at low capacity either by steam or electricity. Ordinarily it is for men and materials and idle day use. A 400-hp., 300-r.p.m. motor drives the hoist for fast work and a 200-hp., 600-r.p.m. motor does slow night duty. The pair of 14 x 16 in. steam engines serves in case of electric power failure.





Part of the Town Adjacent to New Orient

This view, taken from the top of the tipple of the water tower, shows how West Frankfort flows right up to the mine. There are 18,000 people in the town, and, although several other mines are near, none of them is more accessible to the labor supply of the region.

Though the possibility of failure of electric current from the source of supply, which would render the

hoist inoperative, is remote, provision has been made against such an emergency by equipping this hoist with a 14x16-in. duplex reversible steam-hoisting engine. This is arranged to drive the pinion shaft from a spur gear and can be disconnected by sliding this gear along the engine shaft.

This hoist operates from a depth of 520 ft. the weight of this cage being 18,000 lb., car 4,000 lb. and coal 11,000 lb. It is equipped with one 9-ft. brake, with 11-in. face. It is of the customary Norberg parallel-motion post type, such as is used on the main hoist. For operation of the brake, the same type of hydraulic thrust cylinder is used.

As men are handled on this hoist, it is essential that every precaution be taken to guard it against accident. Safety is assured against any possibility which may arise. It is similar in this respect to the main hoist. For the steam engine a device is provided to cut off the steam in case of overspeed or overtravel.

Chemical Compounds in Coal-Forming Bogs Same in All Geologic Ages

From age to age, from one coal-forming period to another, the principal chemical compounds of which the plant substances, now constituting coal, were formed have not changed, notwithstanding the evolution meanwhile of families, genera and species. Said David White, senior geologist of the U. S. Geological Survey, at the winter meeting of the American Institute of Mining & Metallurgical Engineers: "Woody tissue in thick secondary development, spores, pollen grains, pith, cambium, bark, leaves, epidermis, cuticles, glands, wound secretions, pigments, protoplasm, starches, gums, waxes, oils and resins were apparently as plentiful in Mississippian as in Tertiary peats.

"No essential chemical distinctions that might notably affect the composition of the biochemical deposit have yet been detected. Bacteria and fungi were varied and numerous. The waxy-fatty algae forming the bog-heads and entering many canals of the early Carboniferous appear almost indistinguishable from those of the bogheads forming today—a fact not remarkable in view of the simple structure and low order of these plants. In all late Devonian and younger coals we have woody or distinctly xyloid types; beds rich in fusain, and deposits formed largely of spores, resins or other hydrogenous débris. In fact, in their fossil components and original constitution, all coals, graphitic and anthracitic, bituminous and brown, have their counterparts in the peats and other organic sediments of the present day.

"The woody type or group, with much débris of stem, branch and twig, and more or less fusain, is the common type—the ordinary "humic" type—of coal in all coal fields, as well as of peats laid down in the temperate and warmer moist climates of the present day. Genuine peat like that of today but silicified before compression under loading, has been found in the lower Devonian of Great Britain. The revelations of the microscopical study of the coals themselves as described by Renault, Bertrand, Thiessen, Jeffrey, Turner and others find confirmation in the peat samples preserved in the calcitic and siliceous "coal balls" formed at or near the surface of the Carboniferous peats in certain districts of Europe and America.

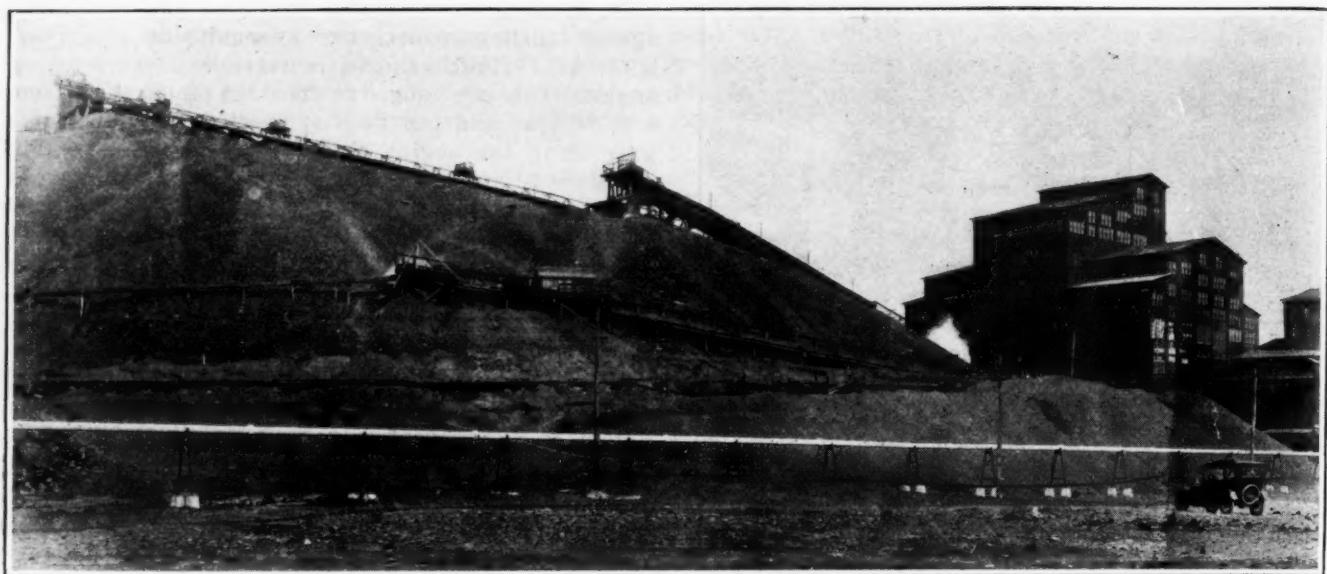
Bituloid, a Colloidal Oil, Tested as a Medium for Laying Coal Dust

Two British mines, both fairly deep and warm, are being used for experimentation on the qualities of bituloid as a means of keeping down coal dust and thus, it is hoped, preventing the extension of mine explosions. These mines belong respectively to the Cardiff Collieries, of Llanbradach and the United National Collieries at Wattstown. The first tests will be made in the return airway and not in the intake and will be for short distances only. They are designed to determine the permanency of the sprayed bituloid.

The air will have to be carefully tested on either side of the district thus treated to determine if the oil is vaporizing. If these tests are satisfactory it is proposed to bituloid about a mile on the main road of each of these collieries, partly where the roads have been sprayed with rock dust and partly where they have been merely carefully cleaned. Thereafter, these areas would be re-treated and a record kept of the frequency with which bituloid needed to be applied—an important consideration in view of the cost.

As it would be a contravention of the Coal Mines Acts to make such tests without official sanction, application was made to the Department for permission with the result that the Division Inspector of Mines for South Wales was instructed to examine and approve the districts selected for tests and report to the Research Board, which would, in turn, report to the Ministry of Mines. When a deputation of the South Wales Institute of Engineers, the Monmouthshire and South Wales Coalowners' Association, the Colliery Managers' Association and the Miners' Federation was received by Colonel Lane-Fox, Secretary of Mines, his chief advisers and the members of the Department Research Board, it was told that the Board was quite satisfied with bituloid as a damping agency, and as to its durability, indications of the last spraying at Eskmeals were still to be seen. Dr. Wheeler emphasizes this fact at some length.

The deputation pointed out that, as bituloid contained a large percentage of green tar oil, volatile matter might possibly be emitted at the temperature of some Welsh mines, and it was urged that experiments should be made to determine if it would be explosive.



Olyphant Breaker and Culm Bank, Hudson Coal Co.

Anthracite Must Reframe Merchandising Policies To Checkmate Aggressive Competition

Position as "Standard" Domestic Fuel a Tremendous Asset, But Power of Tradition to Protect Market Is Weakening — Closer Retail Contact Essential

By Sydney A. Hale
Special Contributor, *Coal Age*, New York City

CHIEF AMONG the assets of the anthracite industry are the fuel itself and the power of tradition. Anthracite, starting out with high hopes of being the dominant industrial fuel, in the course of the years since the exploitation of the deposits of northeastern Pennsylvania began over a century ago, has surrendered that dream to become the standard by which all other claimants for consideration as domestic fuels are measured. To millions of householders in the United States, anthracite is the only domestic fuel known. That is a tremendous asset.

To have competitors adopt the anthracite nomenclature for the sizes offered by them to the domestic trade, to have these same competitors constantly endeavoring to demonstrate that their product is equal or superior to anthracite give hard coal an enhanced standing even in the eyes of consumers in territory where anthracite is no longer the undisputed choice for household use. Of course, if and where the competitor can convince the consumer that his fuel is superior to anthracite, then this tower of strength passes over to the enemy and becomes a source of weakness.

Tradition has also performed yeoman service for the anthracite industry in holding its domestic markets. The use of hard coal in the Middle Atlantic and the New England States is a heritage of generations. For the most

part consumers know no other fuel and want to know no other. Unless the incentive to change is strong, they have no desire to make the acquaintance of bituminous coal, coke or fuel oil. It is in the more westerly states, where the pioneers broke away from the traditions of the East and the conservatism that is popularly associated with the North Atlantic seaboard that the path of the competitor of anthracite has been easiest. So strongly is anthracite entrenched in that Eastern section of the country that the average producer of bituminous coal does not even attempt to cut into the market.

In the past the anthracite industry has leaned heavily upon this power of tradition: many distributors are still relying upon the fancied security it affords. But any merchandising policy which may be based upon the belief that this power of tradition will remain an unfailing shield to protect the anthracite producer in his enjoyment of the seaboard markets will come to grief. All of the competitors of anthracite are not as awed by tradition as is the average producer of bituminous coal. There are some who are willing to challenge the supremacy of hard coal on its own chosen battleground.

Bituminous coal has been sold for domestic use in West Philadelphia and the tonnage, though small, is growing. Byproduct coke has made marked headway

SECOND OF A SERIES of articles on the problems of the anthracite companies. The troubles of all operators, whether bituminous or anthracite, have many points of contact and what the author says will reflect light on the difficulties of the soft-coal operator and will aid, it is to be hoped, in their solution.

in the suburbs of New York City. In Boston and in Providence coke is also developing a market. The power of tradition is gradually breaking down. When in one metropolitan market the local distribution of by-product coke has grown from 5,000 to nearly 40,000 tons in less than 15 years it is not safe to say that the hold of anthracite is perpetual.

Oil competition, which attacks coal not with a plea that the substitution of oil for coal means lower cost, but greater convenience, has become such a dangerous rival that detailed consideration of it will be reserved for an article which will appear in a subsequent issue of *Coal Age*. The gas industry is also making a drive to induce the householder to replace his coal-burning equipment with a gas-heater. The significant fact in connection with the competition of both oil and gas is that they are cutting the ground from under the claim frequently advanced in recent years that anthracite coal was a "luxury" fuel and could count upon a safe and steady demand from consumers to whom cost was no object.

If there is one power of tradition working to help the anthracite industry retain its hold upon its markets, there is another tradition working against it. That is the public distrust in which the anthracite industry is generally held. For years the railroads were under the blight of "the public be damned" remark attributed—but with an erroneous implication—to W. H. Vanderbilt. The infelicitously phrased "divine right" doctrine laid at the door of George F. Baer has helped to color popular opinion of the coal industry and even now it rises from its grave to plague the producers. So, too, the attitude adopted in 1902 created false impressions and served to strengthen earlier unfavorable ones. The combinations and community-of-interest arrangements of the late '90s also provoked much hypocritical condemnation. "Coal baron" seems firmly embedded in the vocabularies of newspaper editorial writers and politicians while the legend of a "hard-coal trust" still displays astonishing vitality.

ANTHRACITE INDUSTRY STILL ABUSED

These things and others which might be cited have influenced the current of popular thinking on the anthracite industry. Fancied injuries are remembered long after real benefits conferred have been forgotten. Despite the fact that the industry has convinced federal bodies such as the United States Fuel Administration that its prices were fair, despite the fact also that the Federal Trade Commission was ready to recommend and President Wilson to adopt the Reading circular as the basis for government-established maximum prices, the anthracite trade continues to be an object of public suspicion and popular abuse.

How shall this condition be changed? The suggestion most frequently advanced by those who are not willing to accept the situation with an air of patient martyrdom or who philosophically dismiss it as something that cannot be changed, is a publicity campaign to set the industry right in the eyes of the public. That something should be done along such lines is too obvious to merit argument. When it comes to the direction such publicity should take, however, a fresh viewpoint will be needed. Advertising efforts in the past, except when put forth to meet some particular crisis, have not always been of a character to inspire enthusiasm. Silence is charity.

Whatever campaign may be undertaken to sell the

industry to the public will fail unless the producer has first sold himself to the retail distributor. The retail coal merchant is the most important link in the chain of public contact—and the suppressed resentment nursed by many retailers against their sources of supply is one of the most dangerous elements in the present situation. There are too many producers who have been brought up to believe that the retail dealer is a necessary nuisance who exists only on their sufferance.

The old days when railroads and their coal companies were one and the railroad could make or break an industry on its line through rate manipulation, the concentration of the control of tonnage during 1901-1912 and the extraordinary demands placed upon the industry during the war all fostered that idea. The retail dealer begging with shaking knees for tonnage was not a spectacle to command respect. But the retail coal merchant has been emerging from his obscurity. He is becoming a better business man. He is organizing and feeling the power of organization back of him. And memories of the arbitrary policies of the past, the lack of contact with the higher officials of the producing companies still smart.

MUST CONVINCE RETAIL TRADE

For the most part, anthracite producers are unaware that this resentment exists. This is only natural because the retailer is still dependent upon them for his supply of coal, and most dealers are unwilling to jeopardize that supply by a display of lacerated feelings. Therefore, if the anthracite industry expects to rehabilitate itself in the eyes of the public it must convince the retail dealers that the mistakes of the past will not be repeated. It must convince them that it proposes, as it did in the recent conferences with the anthracite trade relations committee of the National Retail Coal Merchants' Association, to discuss problems of mutual concern with the retailers, to sound out their views and to adopt them when they are in the best interest of the industry as a whole.

Who Burns Domestic Anthracite?

City	Gross Tons
New York, N. Y. (1).....	6,505,090
Philadelphia, Pa. (3).....	2,478,271
Chicago, Ill. (2).....	1,315,405
Boston, Mass. (7).....	1,112,537
Baltimore, Md. (8).....	548,157
Detroit, Mich. (4).....	536,539
Buffalo, N. Y. (11).....	522,991
Newark, N. J. (15).....	510,577
Washington, D. C. (14).....	474,908
Rochester, N. Y. (23).....	437,794
Milwaukee, Wis. (13).....	434,459
Syracuse, N. Y. (27).....	376,583
Jersey City, N. J. (22).....	362,050
Superior, Wis.....	286,915
Hoboken, N. J.....	282,178
Providence, R. I. (26).....	240,152
Hartford, Conn.....	238,955
New Haven, Conn. (28).....	214,702
Wilkes-Barre Pa.....	213,718
Minneapolis, Minn. (18).....	203,386
Trenton, N. J. (31).....	203,064
Reading, Pa. (32).....	195,145
Patterson, N. J. (30).....	190,016
Duluth, Minn. (33).....	181,625
Scranton, Pa. (29).....	180,804

The foregoing list shows the shipments of domestic anthracite coal to the 25 largest anthracite coal-consuming cities of the United States during the coal year ended March 31, 1922. The figures in parentheses following the names of most of the cities show the population rank as given in the 1920 census.

Above all, the anthracite producers must establish closer personal contact with the retail trade. They must seek to understand the problems confronting the retailer and to bring understanding of the producers' problems to the retail distributor. Too often in the past misunderstanding or ignorance has served to make the retailer dangerously neutral where he should have been an active ally.

Because the producer has not taken him into his confidence the retailer has not been able to properly meet the consumer's criticism of anthracite policies and practices. Instead of defending them when they were defensible he has silently acquiesced in the condemnation voiced by his customers. "The operators" and a deprecating shrug can sometimes work more havoc than an outspoken attack.

SELL PUBLIC THROUGH RETAILER

Executives of the larger companies may say that their time is so occupied that they cannot cultivate this personal contact with the generality of retailers. The answer to that is that selling the industry to the public is the biggest job any executive has today. He cannot afford to leave it to subordinates. Moreover, his opportunities for direct contact with the general public are necessarily limited. He cannot tour the country making stump speeches. If he did, his audiences would be slim. But the retailer is in daily contact with the very public upon whose support the future of the industry depends. He gets the real consumer reaction. By establishing personal contact with him, by making him an active propagandist, the executive of the producing company can reach the public.

The campaign of the industry, however, should not stop with establishing and cementing retail contacts although that is the first thing that must be done. The industry needs more and better publicity than it has had in the past. Too much attention has been paid to attempts to "jimmy" the trade into public favor through the medium of free space and too little money and time have been expended upon telling the story to the public through the medium of paid advertising.

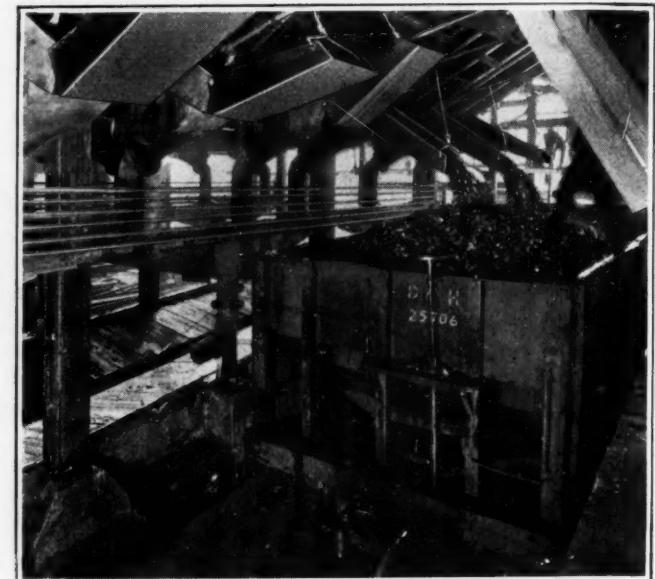
As before observed, most of the paid advertising has been defensive propaganda. It has seemed to be the feeling that the only time the producers were called upon to spend money was when the state of political or popular opinion threatened to take it away from them. When the immediate crisis has passed, the advertising copy has vanished from the pages of the press.

ADVERTISING POLICY WEAK

On the doubtful theory that anything is better than nothing it may be possible to speak kindly of such an advertising policy. But at best it is a weak policy and, even when the copy is most carefully planned, there is always the danger that the defense will be taken by the public as proof that the accusations are well founded.

What is needed, therefore, is a continuous, frank educational campaign which will establish public confidence in the industry and will give the man in the street a sympathetic slant toward it. Then, when the occasion arises where defensive action is required, the industry will appear at the bar of public opinion in the rôle of an old friend who has a right to be heard before conviction.

The field of free publicity is narrowing. The industry might just as well recognize that first as last.



Almost Ready for the Final Breaker Test

When the coal passes from loading chutes to railroad car just one test remains before the fuel is ready to be started on its journey to the retail dealer. After the coal is loaded, samples are taken under the direction of the sales department to determine whether the shipment meets the standards of preparation and sizing; if it does not, the car is rejected and the contents sent back through the breaker.

The number of items fed out by the publicity agents of the industry which may appear in the daily newspapers published in the anthracite region should not be given too much weight in determining the force of what has been accomplished.

It is much more important that the industry be able to count upon a fair presentation of its side of a controversial issue when its opponents seem to have the run of the press than that the newspapers carry occasional obscure items about burning mines, the earnings of Peter Petrovich or the longevity of Mike Slocroakski.

Anthracite cannot be sure of this unless it is willing to play the publicity game fairly. That means absolute, not relative, frankness and honesty in dealing with the press. It means telling the inquiring reporter the things the industry would prefer to leave unsaid. The railroads learned the value of that lesson in handling information on accidents. The public utilities learned it after repressive regulation drove many of them to the verge of bankruptcy.

Both the anthracite and the bituminous coal trade have been slow to profit by the experience of others. The hard-coal industry still labors under delusions of grandeur and suffers from a bad attack of what is known in White Light circles as "high hat." If all the "Private—Keep Off" signs were torn down, the industry would learn the secret that what the public can find out for the mere asking soon ceases to interest it. The more the industry is willing to take the public into its confidence, the less the public will worry it.

There has been too great a disposition on the part of the anthracite industry in its straight merchandising publicity to stress the demerits of its competitors. That is a pit into which business as green in advertising as the anthracite trade not infrequently falls. But it is the poorest kind of merchandising.

What the anthracite industry should emphasize is its own merits, its own strong points. To filch a phrase from the utility field, its campaign should be built around its ability to "service the consumer."

Upon no other basis can it hope to get far in re-establishing its position.

The phases of the merchandising problem discussed in the preceding paragraphs are the most difficult which the industry has to solve because they deal, for the most part, with intangibles. They are questions of broad policy rather than of concrete marketing plans. Of the general tangible problems that must be met two overtop all others. These are the questions of preparation and of price. The most common consumer complaint is "the last load wasn't like the one you delivered before." With variable standards of preparation under which, for example, the percentage of undersize in chestnut coal ranges from 5 to 30 per cent, the reason for complaints is not hard to understand. As was said by the anthracite trade relations committee of the national retail association:

"The average consumer of domestic sizes knows little of the British thermal unit content or fuel value, but he does know the difference between pea and chestnut coal as a matter of size, and he will not be satisfied with chestnut coal containing 20 to 30 per cent of pea if he can go to another dealer and obtain chestnut coal having less than 10 per cent of pea."

That there has been an increase in the undersize in

the larger coal in recent years can hardly be denied in the face of the declining percentages of pea shipped shown in Table I in last week's article. When to this is added the variable standards to which the retailers object, the ground for the widespread complaint can be readily understood. And this ties in indirectly with the question of price. It is possible to justify prices now charged by comparing them with increases in wages, rent and the prices of other commodities. A well-posted retail coal merchant should be able to satisfy the consumer that prices are not out of line. But the consumer naturally expects that he should receive a better product for \$16 than he received when he paid \$4 a ton. If he does not, the price paid adds insult to injury.

Fortunately the action taken by the producers last month, when they adopted uniform standards of preparation, removes that troublesome factor from the field of active discussion. As time goes on and competition increases, however, modifications in these standards which will lower the permissible maxima of undersize and slate will be necessary.

The problems of marketing pea and No. 1 buckwheat to the domestic trade will be discussed in later issues of *Coal Age*.

Shovel Climbs Steep, Narrow Road to Strip Coal on Mountain Top

Recently the Geo. F. Lee Coal Co. decided to strip the overburden from a piece of coal near Wilkes-Barre that lay about 3,000 ft. up on a mountain. The cost of special machinery for this work seemed prohibitive, so it was decided to use one of the shovels already owned by the company, an Orton & Steinbrenner 1-cu.yd. machine. Investigation showed that the expense of dismantling this shovel, hauling the component parts up the mountain to the stripping site and there reassembling them would also be excessive. It was therefore decided to attempt "driving" the shovel up the narrow road under its own power.

Inasmuch as the way was difficult—in places being cut through solid rock—was extremely crooked and sometimes quite narrow, a survey of the proposed route was made. As may be judged from the accompanying

illustration the crawler treads barely squeezed through in places. Fording a creek at the bottom of the mountain, which constituted the first lap of the journey, afforded an excellent test of the machine's running gear before the upward climb began.

Some doubts were entertained before the journey up the mountain was started lest the engine with which the shovel was equipped might prove unequal to the work of propelling the machine up the steeper grades. Such fears were shown to be entirely unfounded, however, as the shovel, pursued the even tenor of its way in spite of inclinations at times as steep as 40 per cent and reached the top of the climb without once stalling the engine. It is stated also that the machine ran cool throughout the entire journey and showed plenty of reserve power at all times.

Drains Sulphur Water Into Drillhole

Some coal companies drill from coal beds into dry measures below them, preferably the limestone, and so remove mine water without the expense of pumping. It remained for the Indian Creek Coal & Coke Co., operating Sparks No. 1 and 2 at Indian Head, Pa., to drill a hole outside the mine to receive the mine water and thus comply with a court order not to allow the water of the mine to pollute the creek.

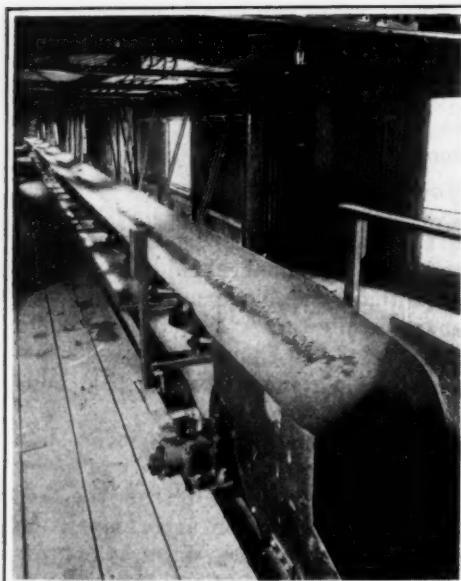
The company drilled a 5-in. well near its plant to a depth of 175 ft. and has been pumping water into the well at a rate of 500 gal. per minute. The water level in the hole has at no time been within 10 ft. of the top of the well, and there are no indications that it has violated the order of the court by entering Indian Creek. It has been said that the Howard Coal Co. is preparing to suspend operations because it could not afford to adopt any method that would satisfy the courts' decree.

To REDUCE SPARKING of the overhead trolley wire at the No. 1-B Colliery of the Dominion Coal Co., Glace Bay, C. B., the wire is greased. The locomotives also are fitted with brushes to keep the rails clean.



Moving Slowly but Steadily Upward

A survey of the road showed that the shovel could squeeze through even the narrowest place although the grades at certain points were steep. It is here shown passing one of the "tightest" places in the entire ascent.



Belt Conveyor, Mine to Tipple

NOT SO many years ago mine cars were transported onto a tipple or breaker for dumping. The practice, then invariable, is now quite frequently modified. In fact, cars are now often dumped within the mine itself. The growing use of belting is making it profitable not to dump on the tipple but at a distance from it. An exemplar of this method is found at the mine of the Diamond Coal Co., at Rivesville, W. Va., about five miles north of Fairmont, on the Monouah Branch of the Baltimore & Ohio R.R., one of the most recently erected three-track coal tipples in northern West Virginia.

The original equipment at this mine, which until 1923 was operated by the Hood Coal Co., consisted of a comparatively new wooden two-track tipple of the bar-screen type arranged for loaded- and empty-car hauls and provided with a crossover dump.

Early last year the Diamond Coal Co. acquired this property, consisting of 1,500 acres of Sewickley coal running about 6 ft. in thickness, and decided to replace the combustible tipple and its relatively antiquated equipment with a tipple of fireproof construction and with equipment which would permit of a more economical and efficient preparation of the coal.

The coal from the mine is brought in 40-car trips by a locomotive to an electrically operated trip feeder of the chain type located about 100 ft. inside the mine mouth. This feeder feeds the 2½-ton capacity mine cars at a uniform rate onto a 10-ton platform scale equipped with a quick-reading dial. After the car is weighed it passes into an automatic safety cage set to operate in conjunction with a crossover dump.

FEEDER DELIVERS CARS TO DUMP

When the coal has been dumped into the feeder hopper, which has sufficient capacity to hold two or more mine-car loads, the empty car goes onto a kick-back and in turn is picked up by an electrically operated chain car haul and is raised and conveyed to the place in the mine where the empty trip is made up.

From the feeder hopper, which is located inside the mine mouth, the run of mine coal is discharged by a reciprocating feeder onto a 36-in. rubber-belt conveyor at a uniform rate of 300 tons per hour, permitting a total daily capacity of over 2,000 tons.

Rivesville Plant Dumps Coal in Mines and Moves It by Belt to Tipple

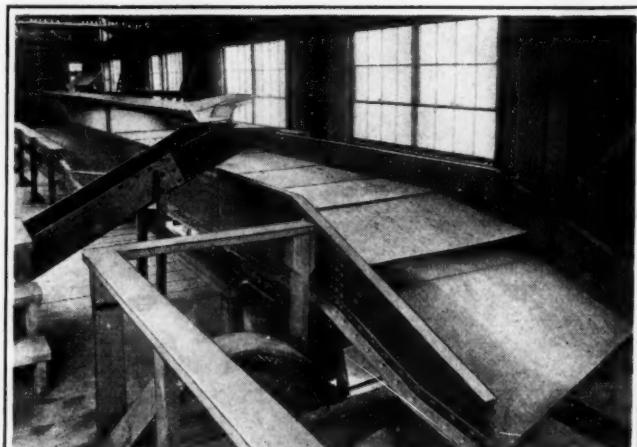
Belt Conveyor Four-Hundred Feet Long Takes Coal from Point One-Hundred Feet from Mine Portal—Special Provisions Made for Picking Nut Coal — Refuse Used for Road Making

This belt conveyor, which is approximately 400 ft. long, delivers the coal through a conveyor discharge chute to a Marcus horizontal screen having a width of 5 ft. The conveyor discharge chute has a fly gate for bypassing run of mine coal to a local-trade bin.

As the impurities that exist in this coal are chiefly found in the smaller sizes it was necessary to provide a more efficient means of screening and picking than the ordinary type of shaker screen and apron picking table provides. For this reason a three-deck screen, with wings 2 ft. wide on each side for the separate picking of the nut coal was installed.

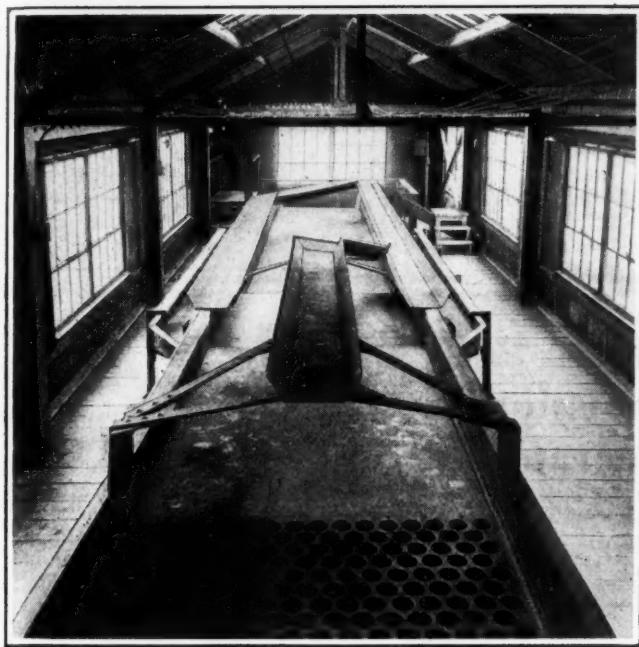
SCREEN OUT ALL, EXCEPT LUMP

At the end of the screen, where the conveyor delivers the coal, the upper deck is provided with 3-in. round perforations for the removal of all except the lump coal. This is immediately picked and allowed to pass down the center of the screen to the lump-loading boom over the outside loading track. The middle deck of the screen is provided with 1½-in. round perforations for the removal of the slack, which falls to the bottom deck of the screen, and is conveyed forward to its gate opening over the slack track.



Picking Table of Diamond Coal Co., Rivesville

At the side of the main screen can be seen, in the rear, a nut picking table and above them both can be seen the refuse trough and chute. The chute end which delivers to the loading boom is shown in the foreground.



Screen-House Interior, Looking Down on Screen

The same movement that takes the coal along the screen and over the picking table carries the waste along the refuse troughs and the nut also over its screen and then along its two picking tables on either side of the main table.

After the slack has been removed from the 3-in. coal on the middle deck, the nut coal is divided into two streams by means of baffle plates which divert this middle size to the wings of the screen for separate picking. After the nut coal has been picked it can be loaded immediately into railroad cars on the middle track by means of a curved-end loading chute, or else it can be passed along to unite with the slack and lump and to be loaded over the lump boom as picked run-of-mine, the lump boom, which is of the well-known apron type, being raised and lowered by means of an electric hoist.

USE REFUSE FOR ROAD REPAIRS

Above the screen and attached thereto is a refuse trough on which the pickings are thrown. This trough has the same motion as the screen and the pickings

are carried forward on it and to the side of the screen where a refuse chute delivers them to a drag conveyor located outside of the tipple structure. This conveyor delivers the pickings to a refuse bin located back beyond the track. Trucks haul them away, and they are used for road repairs.

This plant, which was designed and constructed by the Roberts & Schaefer Co., of Chicago, is electrically operated.

The entire tipple is absolutely fireproof, being built of steel on concrete foundations and covered with asbestos-protected corrugated iron. It is well lighted with top-hung ventilator steel-sash windows and corrugated wire-glass skylights of the puttyless type.

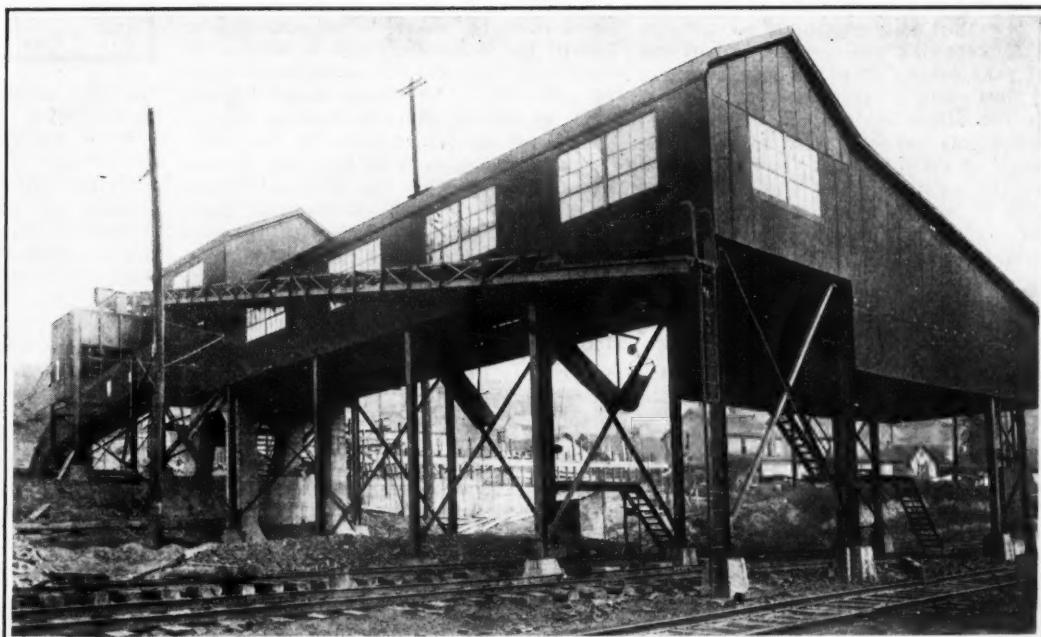
Doctors Say Miner's Nystagmus Is Wrongly Named

Speaking at the Midland Counties Institution of Engineers, University College, Nottingham, England, Dr. Laws declared that nystagmus was the reaction of a certain type of man to a certain type of environment and that the clonic spasm of the eyeball or its oscillation was only one, and not the most important, sign of such reaction. It was not the oscillation that disabled the miner. There was a much more profound disturbance of his nervous mechanism, and as long as they continued to term the disease "nystagmus" and looked only for oscillation, they would be disregarding some of the root causes of the disease.

Dr. A. Christie Reid said the wonderful influence of sunlight in toning up the nervous system should be considered. The lack of light in the mine especially felt by dayshift men had much to do with the neurotic state which some observers had sought to establish into a separate clinical entity, "miner's neurosis." Some thought that sunshine and ultra-violet rays toned up the system by stimulation of the glands of internal secretion. It was possible that a difference in recorded sunshine, as between the foggy island of Great Britain and Continental mining areas, might partly account for the difference in the recovery times of cases. He added that if they would flood the coal face with genial light, the specter of miners' nystagmus would vanish.

Tipple, Showing Conveyor Shed

This view shows also the screen house and the shed over the loading boom. The lattice work on the side carries the conveyor by which the refuse coming from the picking table is carried back to the refuse bin.





West Virginia Strike Divides Interest In Washington with Trade Commission Order to Northwest Dock Operators

Union Showdown Fails to Produce Expected Demonstration—Union Mines Seem to Have Suffered More than Non-Union—Use of All Trade Statistics Hangs in Balance

By Paul Wooton
Washington Correspondent of *Coal Age*

April 1 has come and gone without having produced anything climactic in the coal producing industry. The day set by President Van Bittner of District 17 for the showdown in northern West Virginia seems not to have produced the demonstration which the union expected. Because of the tendency in such situations for each camp to make extravagant claims, accurate information as to the extent of the strike must await figures of the shipment of coal on the railroads serving the region. The loading for that day or for the week ended April 4 will not be available in time for this issue of *Coal Age*. Of course shipments for the day of April 1 have no significance, for that is a well established holiday on which the eight-hour day victory, won in 1898, is commemorated.

Such incomplete reports as have reached Washington indicate that the outstanding happening on April 1 was not the closing of non-union mines or the mines at which the Jacksonville agreement has been violated, but rather the closing of a score more of the faithful few that had continued to observe the Jacksonville scale. The end of the coal year leaves them without business and they cannot carry on.

In the other fields north of the Ohio April 1 was expected also to bring the closing of many mines. It was argued that the expiration of the sales contracts on which many operators have been existing during the last year would force the shutting down of still more union tonnage.

Expiration Dates Scattered

This influence appears to have been overestimated. While the first of April is the season for making sales contracts, all contracts do not expire on March 31. Expiration dates are staggered somewhat and the effect will be spread over a period of some weeks.

The situation naturally causes still more discussion of the merits and demerits of the Jacksonville agreement. There has been some tendency among coal operators to criticize Secretary Hoover for having sponsored the agreement and of being more in sympathy

with the commercial than the producing interests, but this has been an outgrowth of the desire to blame someone when things are going wrong rather than due to any feeling of hostility.

It is hard for an unanesthetized person to go through a surgical operation without wincing. The coal operators, in the opinion of those who are in a position to know, have confidence in Mr. Hoover's intentions and in his ability to lead American business to higher ground. Just at this time, when the union operators are facing the greatest crisis of their history, many really are deriving no small amount of comfort from the knowledge that he is on the scene, and that he can rally the best thought in the industry at any time it may be necessary.

The value of Mr. Hoover to the coal producing industry in times such as these can be appreciated more by considering what the situation would be were the Commerce Secretaryship in the hands of one inclined to do expedient or demagogic things.

Under such conditions as now exist there probably would be no other leader out of the industry, or in it, who could command majority support, even were he able to get a quorum together, except, of course, John L. Lewis.

Interest in Washington in the labor situation, keen as it is, has been shared with the order of the Federal Trade Commission in the Northwest Dock Operators' Association case. Interest has not been confined to the coal industry. The whole matter of trade association statistics is involved.

Among other things that the association is ordered not to do is to furnish statistics to its secretary. The order does not specifically prohibit the furnishing of all statistical information, but when the returns mentioned are eliminated there is not much left.

The association may not gather data on costs of operation or on shipments that have been made. This is a new interpretation of permissible statistical activities of a trade association. The commission's ruling that statements may not be made of number of cars to be shipped in the future or the prices

"Giant" Political Plans?

Governor Pinchot of Pennsylvania seems to have recovered from the disappointment he experienced when his carefully planned participation in the anthracite settlement failed to land for him the presidential nomination. He now is trying to ride into the Senate on "giant" power, according to some of the political savants in Washington. Mrs. Pinchot also is said to be casting hungry eyes at a seat in the House of Representatives.

This latest ambition of Mr. Pinchot has called forth some protests but more quips. Political observers are somewhat at a loss to understand how a man who at heart is for public ownership—one who endorsed California's hydro-electric act—is going to gather support when the people so recently indicated their opposition to such theories.

The giant power scheme, in the opinion of capable engineers who have studied it, bears the same relationship to industry as do giants to everyday life. They feel that it was proven definitely many years ago that the effective and economic direction of the production, wholesaling and distribution of power should be under one hat. To split the management into three sections could do nothing other than add greatly to the price the people would have to pay for electricity.

charged on shipments actually made is in line with court rulings.

It is feared that the effect of the order will be to limit still further the activities of trade associations in collecting and using statistics. It is important to note, however, that it is the use to which the commission alleges the dock association figures were put, rather than their assembling, which is attacked. The inference is that properly used there would be no objection to the gathering of, at least, certain figures.

Alberta Mines Cut Wages

A wage cut has been ordered in several coal mines near Lethbridge, Alta. Mine owners have given a month's notice, and a shutdown of the mines is threatened. The proposed reduction ranges from \$1.16 to \$1.76 a day. Miners now getting \$6.36 a day would be cut to \$5.20 and laborers getting \$5.76 a day would get \$4.

Strike in West Virginia Shuts Down Three Mines; Eleven More Are Affected

Fairmont, W. Va., April 7—While conflicting claims are being made about the success of the non-union miners strike in northern West Virginia, it is safe to say that the strike did not assume the proportions that were generally expected. Miners claim that 5,000 men are on strike. Non-union production April 6 was 87 per cent of normal and aggregated 782 cars in the 12½ counties in northern West Virginia, while the union output aggregated 191 cars.

A survey of the situation, according to the operators shows that three non-union mines are closed by the strike, five rather seriously affected in their working force and six partially affected. One hundred and twenty-five non-union, eleven union and about 135 open-shop mines were working April 7. Since April 1, several non-union mines that have been idle for many months, have resumed operation in Preston County and other fields. With economic conditions against them the union has slim chances of winning the strike, it is thought.

Van A. Bittner, international board member for the United Mine Workers said, "The strike is growing in momentum and everything is progressing well." Again, Mr. Bittner adds, "Nobody knows whether the strike is going to be a success. That will be settled not the day the strike is called but the day it is called off."

Parker Run mine of the Fairmont and Cleveland Coal Co., the largest single tipple mine in northern West Virginia, has started on an open shop basis. The J. A. Paisleys interests started two mines on a union basis in the Morgantown section.

There were no clashes reported on April 1 between union and non-union miners. Several demonstrations were staged, one at Morgantown and one at Clarksburg on April 1, with William Green, president of the American Federation of Labor, making the principal addresses.

Bittner Outlines Plans

Mr. Bittner in an address at Morgantown declared plans were being made to organize the McDowell and Logan County fields. In a previous statement to newspapermen he said the strike call was "the beginning of a campaign to organize every coal mine in West Virginia," adding that the "ground work has been laid in southern West Virginia, but that active work there has not been started." He announced that John L. Lewis, president of the United Mine Workers, would come into the field within the next few weeks to make a series of addresses.

Harrison G. Otis, City Manager of Clarksburg, who welcomed President Green of the American Federation to Clarksburg, declared in his address of welcome that the strike was a dangerous weapon.

President Green in his address announced the willingness of the Federation to join the coal operators and the government in an investigation to find

Trade Association Ruling Awaits Supreme Court

The new Attorney General is not expected to take up actively the matter of trade association statistics until the U. S. Supreme Court decides the cement and maple flooring cases. Since these forthcoming opinions may go far toward clearing up the uncertainty that now exists, the plan advocated by industry to bring test suits will not be pressed in the meantime.

One of the regrets expressed in connection with the selection of Mr. Stone for the Supreme bench was the fact that it means the departure of an Attorney General who had given sympathetic and profound study to the whole question of trade-association figures. His studies, however, may stand him in good stead in contributing to the decision of the cases now before the high tribunal and other cases that may reach it in the future.

The recent action of the Senate in calling on the Federal Trade Commission for a list of the open-price associations is regarded as indicative of an increasing appreciation that there is a wide difference between that type of association and the regular form of trade association engaged entirely in work of a constructive character.

a solution for what he termed evils in the industry, adding that "wage reduction is not the remedy."

The strike may be extended into the Panhandle region in the northern part of the state, it was announced at headquarters of Ohio Subdistrict No. 5 on Saturday afternoon following the arrival of Van Bittner.

The Panhandle district, which includes mines in the Wellsburg-Wheeling-Moundsville region, is under jurisdiction of the eastern Ohio subdistrict.

Frank Ledvinka, president of the Eastern Ohio Subdistrict, said he had received many requests from Ohio and West Virginia miners that the non-union men in the Panhandle be called out, and he predicted that by Tuesday all of the non-union mines in that field would be idle. There are twenty-two non-union mines in the Panhandle, which employ approximately 3,200 men. Union men in the field number 1,000.

Ledvinka said Bittner declared that practically every non-union coal mine in West Virginia would be idle early this week. Bittner declared 90 per cent of the men were ready to strike and that not one non-union mine in the Fairmont-Morgantown district will be working Monday. Among the non-union mines in the district to which it is proposed to extend the strike is the big Redwood colliery of the Wheeling Steel Corporation, in which 120 men were killed by an explosion a year ago. Another is that of Cliftonville, where seven striking miners and the Sheriff of Brooke County met death in a pitched battle during the 1922 general strike.

Utah Copper Co. to Make West's Biggest Contract

The Utah Copper Co. expects to sign a 2,000,000-ton coal contract with four Salt Lake City companies at an early date, according to H. E. Munn, supervisor of coal for the company and its associated companies. Sixteen companies in Utah and Wyoming bid on the contract, which calls for 400,000 tons of coal a year during the next five years. Nut, mine run and slack are the sizes mentioned in the contract, with slack getting the heaviest end and nut the lightest. The Independent, United States, Standard and Carbon are the coal companies favored.

This is the first time 2,000,000 tons of coal has ever been contracted for at one time in the mountain states. Mr. Munn of the copper company would not say anything regarding the price to be paid for the coal, nor would the coal companies. Mr. Munn admitted, however, that he regarded the present as the psychological moment to make a big coal contract. He did not think coal would be any cheaper than it is now for some time to come, he said.

Commenting on the contract the manager of one of the coal companies said it would assure them two days a week at their mine during the next five years. "If we can drum up enough business to make three more days we shall be well off," he said.

Lehigh Valley Income High Despite Coal Segregation

Despite the segregation of its coal properties early last year the Lehigh Valley R.R.'s annual report for 1924 shows net earnings of \$7,352,037, or \$6.06 per share, compared with a net of \$8,586,613 for 1923, or \$7.08 per share. The income account in 1923 included \$6,892,055 in dividends received from the Lehigh Valley Coal Co., which was segregated from the railroad on March 15, 1924, whereas dividends from the coal company received for 1924 were only \$643,057.

Gross revenues were \$76,374,805, the largest in the company's history, exceeding the 1923 gross by \$439,651. Brief strikes, President Loomis explains, cut the revenue from anthracite \$3,244,613. The rebuilding of an important breaker and a severe flood were other adverse factors.

Operating expenses were \$60,967,968, a decrease of \$5,786,245. After payment of \$4,245,749 in dividends the profit and loss account was \$55,621,765, an increase of \$5,637,238. Mr. Loomis says that at the end of the year the company and its subsidiaries had out \$126,824,500 in bonds bearing an average interest rate of 4.61 per cent.

Discussing the segregation of the Lehigh Valley Coal Co., Mr. Loomis says: "As a result of the transaction, stockholders of record March 16, 1924, received upon the payment of \$1 a share a certificate of interest in the coal company for each share of railroad stock owned. These certificates have a market value at the close of the year of more than \$58,000,000. In addition, your company received \$14,968,925, which was used to reimburse the treasury for capital expenditures."

World Coal Output Lower In 1924 Due to Slump In the United States

From the incomplete information that is available, it is estimated by the U. S. Geological Survey that the world's total production of all coal in 1924 was approximately 1,350,000,000 metric tons. In comparison with the output in 1923 this was a decrease of about 9,000,000 tons and it was 16,000,000 tons less than the high record of 1913. The chief factor contributing to the decline was the decrease of more than 14 per cent in the output of soft coal in the United States, and to less important decreases in Canada, Great Britain, Poland, Hungary, Russia and Japan. All the other countries for which figures are shown in the accompanying table reported increased production. Following the settlement of the economic disorders that attended the occupation of the Ruhr, production increased rapidly and the total coal—118,829,000 tons—was within 10 per cent of the 1922 output. The production of lignite also increased and totaled 124,360,000 tons.

France Shows Increase

It is of interest to note the increase in the production in France. From a total of 41,000,000 tons in 1913, the interruption brought about by the World War carried the output to the low level of 22,000,000 tons in 1919. Production has recovered steadily since 1919, and the 1924 total of nearly 45,000,000 tons (including Lorraine) was more than double that in 1922 and exceeded the prewar level by 4,000,000 tons.

The following table summarizes the information received by the Geological

Coal Produced in the Principal Countries of the World in the Calendar Years 1922, 1923 and 1924

(In metric tons of 2,204.622 lb.)

Country	1922	1923	1924
North America:			
Canada { Coal.....	10,587,611	12,163,804	11,900,000
Lignite.....	3,162,907	3,249,605	
United States { Anthracite.....	49,607,344	84,675,282	82,000,000
Bituminous and lignite.....	383,073,174	511,791,872	438,420,000
(a).....		(a)	(a)
1,916,275	2,004,192		(a)
Other countries.....			
South America:			
Europe:			
Belgium.....	21,208,500	22,922,340	23,360,000
Czechoslovakia { Coal.....	10,464,990	12,347,251	34,866,000
Lignite.....	19,174,296	16,265,530	
France { Coal.....	31,810,000	37,682,235	44,955,000
Lignite.....	772,000	861,435	
Germany { Coal (b).....	129,964,597	62,224,535	118,829,000
Lignite.....	137,207,125	118,248,735	124,360,000
Saar.....	11,240,000	9,121,285	14,032,000
Hungary.....	7,717,610	7,709,775	7,200,000
Netherlands { Coal.....	4,866,371	5,595,478	5,882,000
Lignite.....	28,919	54,185	190,000
Poland.....	24,194,797	36,296,032	(c) 32,000,000
Russia.....	9,049,300	14,504,300	(c) 14,000,000
Spain { Coal.....	4,435,843	5,971,446	
Lignite.....	329,680	394,268	(a)
United Kingdom { Great Britain.....	253,613,054	280,430,369	273,453,000
Ireland.....	(a)	(a)	(a)
Other countries.....	(a)	(a)	(a)
Asia:			
China.....	22,681,000	(a)	(a)
India, British.....	19,316,112	19,973,285	20,524,000
Japan (inc. Taiwan and Karafuto) { Coal.....	29,163,727	30,600,000	(c) 30,000,000
Lignite.....	166,302	151,462	
Other countries.....	(a)	(a)	(a)
Africa:			
Union of South Africa.....	8,830,774	10,810,897	11,331,000
Other countries.....	(a)	(a)	(a)
Oceania:			
Australia:			
New South Wales.....	10,346,572	10,646,693	11,805,000
Other states.....	2,149,845	2,267,799	(a)
Other countries.....	(a)	(a)	(a)
Totals.....	1,226,200,000	1,359,000,000	1,350,000,000

(a) Estimate included in total. (b) Of which the Ruhr produced as follows: 1922, 97,346,176 tons; 1923, 40,000,000 tons; 1924, 90,240,000 tons. (c) Estimated from monthly figures as follows: Poland and Russia, 11 months; Japan, 9 months.

High Court Balks 'Fishing' By Trade Commission

The first of a series of decisions that are expected to define more clearly the powers of Congress in conducting investigations was handed down last week by the U. S. Supreme Court. This decision has a direct bearing on the cardinal principle involved in the Claire Furnace Co. case, which is now pending in the Supreme Court, and also on the case of the Maynard Coal Co., which is on the docket of the Court of Appeals of the District of Columbia.

The Supreme Court, in sustaining the lower court, held that the Federal Trade Commission, even though acting under a Senate resolution, could not compel business concerns to permit access to books and records in an inquiry designed to provide data for legislative consideration. The decision came in connection with an appeal by the commission from a decision of the lower court in its investigation of the affairs of certain grain companies in Maryland. The grain companies insisted that the commission's demand proposed unlawful search and seizure, and argued that, while it was acting under a resolution of the Senate, it was on a "fishing expedition" without any tangible idea as to just what the papers and books of the firms contained.

Survey up to March 14. Estimates have been used for less than 5 per cent of the world's output.

Output by Canadian Mines Lower in December

Coal output by Canadian mines in December, 1924 dropped 4 per cent below the production for the preceding month and 3 per cent below the average for December in the past five years. The figures were 1,505,519 tons in December as against 1,569,483 tons in November, while compared with the average for the month during the five preceding years, the decrease was 35,982 tons. Production by provinces in December showed increases in Alberta and British Columbia and decreases in Nova Scotia and Saskatchewan.

The total production of coal in Canada during 1924 was 13,617,000 tons, a decrease of 3,373,000 tons from 1923. In Nova Scotia the decrease was 1,040,000 tons; in New Brunswick, 61,000 tons; in Alberta, 1,679,000 tons; in British Columbia, 633,000 tons. Saskatchewan showed a gain of 39,000 tons and the Yukon Territory a gain of about 800 tons.

Comparison of December and November figures covering the total importation of coal from the United States and Great Britain showed a decrease of 5 per cent. December imports amounted to 1,391,778 tons while in November 1,452,208 tons was brought in. December importations this year were 13 per cent lower than the five-year average for the month. During December, 30,389 tons was imported from Great Britain. Total importation of coal into Canada for the twelve months ending December, 1924 was 16,828,578 tons, or 10 per cent below the average for the five preceding years.

Imports of anthracite for December totaled 399,109 tons. This was 37,350 tons above the quantity imported in November and about 6 per cent below the five-year average for the month. Anthracite imported from the United States amounted to 368,720 tons, while 30,389 tons came from Great Britain. The total anthracite imported during 1924 was 4,183,594 tons, a decrease of 6 per cent below the five-year average.

Exports Below Average

Exports of Canadian coal in December were 40 per cent greater than in November. The quantities were: December, 90,126 tons, and November, 64,075 tons. Comparison of the December exports with the preceding five-year average showed a decrease of 45 per cent. The cumulative exports for the year amounted to 773,246 tons, or 62 per cent less than the five-year average.

The total number of men employed in the coal mines of Canada during December was 30,959, of whom 23,966 worked underground and 6,993 on surface, as compared with a total of 28,904 in November, of whom 22,411 worked underground and 6,493 on surface. Production per man was 48.6 tons for December, as against 53.4 tons per man for November; during December the production per man-day was 2.6 tons, being the same as in the previous month. The tonnage lost was largely due to "lack of orders" and "other causes" in December.

Delaware & Hudson Plans Separation of Anthracite And Railroad Properties

After successfully defending its ownership of extensive coal properties during the Sherman Act drive against the anthracite roads several years ago, the Delaware & Hudson Co., the oldest railroad operating company in the United States, is preparing to separate its coal holdings from its rail properties of its own volition, according to notices sent out April 4 to its stockholders.

It has been reported at various times during the last two years in railroad and financial circles that the Delaware & Hudson was contemplating the segregation of its coal lands, but these have generally been attributed to the activities of stock-market "pools."

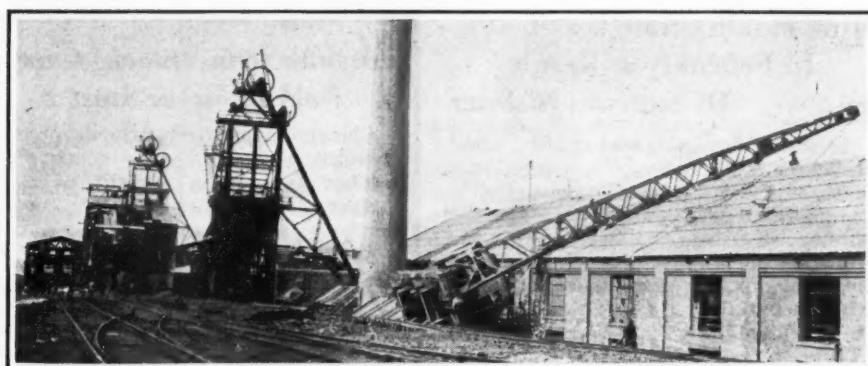
Such rumors have been consistently denied at the offices of the Delaware & Hudson, except to the extent that a year ago President Loree admitted having been in communication with the Attorney General on the matter. Whether the present move is the result of soundings taken on the attitude of the new Attorney General, or whether it is a case of practical corporate policy could not be learned at the offices of the company.

The Delaware & Hudson's holdings in the anthracite field are extensive, the Hudson Coal Co., its chief subsidiary, having an annual output of between 10,000,000 and 11,000,000 tons. As a result, the railroad is one of the country's leading anthracite carriers, about 71 per cent of its traffic coming from this source.

"You are notified that there will be presented at the annual meeting," said the announcement of the Delaware & Hudson issued to stockholders on Saturday, "a recommendation by the board of managers of the corporation that the stockholders shall confer on such board authority, when in the judgment of said board it shall be desirable and advantageous, to transfer to a corporation or corporations, all of whose stock shall be owned by the Delaware & Hudson Co., all or any of the anthracite lands or interests therein belonging to it, and all real and personal property owned or controlled by it pertaining to the mining, preparation and marketing of anthracite, including the stock of subsidiary corporations owning stock of that nature."

The Delaware & Hudson has not reported separately the earnings derived from its coal properties since 1916, but in that year gross revenues from this department were more than \$15,000,000. The stock of the Hudson Coal Co. has a par value in excess of \$16,000,000.

The Delaware & Hudson Co. celebrated its centennial two years ago (see *Coal Age*, May 3, 1923). It was incorporated April 23, 1823, under charter of the New York Legislature, as the President, Managers & Co. of the Delaware & Hudson Canal. The company formerly operated the Delaware & Hudson Canal from Honesdale, Pa., to Rondout, N. Y., but the canal was abandoned and the cost written off the books in 1898. The old "gravity" railroad was built in 1829, was broad-



When the Tornado Did the Lifting the Crane Left the Railroad Tracks

At New Orient Mine of the Chicago, Wilmington & Franklin Coal Co., after the tornado of March 18. From left to right: Main hoist, auxiliary hoist and boiler room. Note how well the steel structures, despite their covering, withstood the tornado. The concrete stack, also, successfully battled with the storm.

ened to the standard gage and opened up to regular freight and passenger business in 1900. The railroad lines operated by the company total more than 900 miles, running from Wilkes-Barre, Pa., to Rouses Point, on the Canadian line, by way of Albany and Schenectady.

When the Department of Justice made war a few years ago on the carriers owning coal properties, forcing a number of them to segregate their anthracite holdings, the Delaware & Hudson case was not pushed for the reason that it had been chartered not as a railroad but with miscellaneous fields of activities, and for the further reason that the relations between the coal and the transportation business were construed as not being in violation of the act.

Coal Consumption and Power Output By Utilities Gaining

Public-utility power plants in the United States consumed 3,701,795 net tons of coal in January, according to the U. S. Geological Survey. This compares with 3,635,241 tons in the preceding month. Fuel oil consumption by utilities in January totaled 1,512,705 barrels, compared with 1,374,228 barrels in the previous month.

The average production of electricity by public-utility power plants started off in 1925 in January at the rate of 180,300,000 kw.-hr. per day, the highest rate yet reached in the production of electricity. The January rate exceeded the December rate by about 1½ per cent and exceeded the January, 1924, rate by nearly 8 per cent. Based on the increase in output during previous years, the average daily rate of production of electricity in January, 1926, probably will be over 200,000,000 kw.-hr. per day.

Legal aspects of a possible transfer of the Bureau of Mines to the Department of Commerce by executive order are being studied. Some are of the opinion that this bureau may not be transferred in this manner, since it was created since the act authorizing the transfer of bureaus to the Commerce Department. Others are of the opinion that there is no legal barrier to the transfer.

Dr. Wheeler Will Address Coal Men in Pittsburgh

On the occasion of the visit of Dr. R. V. Wheeler, professor of fuel technology, Sheffield University, England, and Director Mines Experiment Station of Great Britain, to the Bureau of Mines at Pittsburgh, Pa., an all-day coal conference has been arranged for April 23. This meeting, and two evening lectures to be given by Professor Wheeler at the Carnegie Institute of Technology, will be open to the public.

The conference program, arranged by A. C. Fieldner, superintendent Pittsburgh Station, Bureau of Mines, is as follows:

MORNING PROGRAM—10 A.M.

1. Introduction—George S. Rice, chief mining engineer, U. S. Bureau of Mines, Washington, D. C.
2. Origin of Coal—Dr. R. Thiessen, research chemist, U. S. Bureau of Mines.
3. Geology of Coal—Dr. C. R. Fettke, professor of geology, Carnegie Institute of Technology.

4. Constitution of Coal (with special reference to inflammability of coal dust and spontaneous combustion)—Prof. R. V. Wheeler, Professor of Fuel Technology, University of Sheffield, England.

5. Present Status and Possible Future of Byproduct Coking—Dr. Joseph H. James, head of department of chemical engineering, Carnegie Institute of Technology.

AFTERNOON PROGRAM—2 P.M.

1. Economic Factors in the Processing or Preparation of Smokeless Fuels—O. P. Hood, chief mechanical engineer, U. S. Bureau of Mines.

2. Spontaneous Heating of Coal in Mines and in Storage—J. D. Davis, fuels chemist, U. S. Bureau of Mines.

3. Inflammability of Coal Dust (with special reference to effect of fineness of particles)—C. M. Bouton, research chemist, U. S. Bureau of Mines.

4. Significance of Pulverized Fuel Combustion to the Coal Mining Industry—P. Nicholls, fuels engineer, U. S. Bureau of Mines.

5. Relative Influence of Coal Constituents on the Washing and Preparation of Coal—H. F. Yancey, engineer, U. S. Bureau of Mines.

Professor Wheeler will give the following lectures at Carnegie Institute of Technology in the Carnegie Union (Administration Building), 8:30 p.m.:

Wednesday, April 22, "Constitution and Origin of Coal."

Thursday, April 23, "The Relation of Constitution and Origin of Coal to Practical Problems in Mining, Storage, and Utilization."

The Thursday conference will not duplicate, but will supplement and offer opportunity for discussion of the subjects presented in Wednesday night's lecture.

Mine Fatality Rate Up In February as Result Of Sullivan Disaster

Accidents at coal mines in the United States in February, 1925, caused the death of 184 men, according to reports from state mine inspectors to the Bureau of Mines. Fifty-one of the fatalities, or more than one-fourth of the total number, were due to a mine explosion at Sullivan, Ind., on Feb. 20. The accident rate for the month, including the Sullivan disaster, was 3.99 deaths per million tons of coal produced, the output of coal during February being 46,163,000 tons; excluding the explosion at Sullivan, the rate was 2.88. For the preceding month the rate was 3.62 and in February, 1924, it was 3.33 per million tons.

For bituminous mines throughout the country the number of fatal accidents during February was 139. As the output of bituminous coal during the month was 38,987,000 tons, the fatality rate was 3.57 per million tons, as compared with a rate of 2.79 for February last year, and an average rate of 3.93 for the month of February over the ten-year period 1915-1924.

For anthracite mines alone the reports for February shows 45 men killed by accidents, which, based on a production of 7,176,000 tons of coal, indicated a fatality rate of 6.27 per million tons, as compared with a rate of 6.9 for the same month last year and an average ten-year rate of 6.29 for the month of February.

Reports for the first two months of

Fortune from 'Slack' Gave Negro Lawyer Start

Chicago papers recently devoted columns of space to the death of George Jackson, a wealthy negro lawyer. His fortune had its cornerstone in coal.

Prior to the Civil War, Robert Gordon was a negro slave belonging to a Virginia miner—there was no West Virginia then. In those days slack coal was thought unsalable. Gordon begged the "leav'in's" from his master, barged it down to Cincinnati, sold it and kept on selling it until he accumulated \$1,000, with which he purchased his freedom. He it was who introduced slack coal on the Cincinnati market.

Later, Gordon moved to Cincinnati, where he engaged in the retailing of coal, invested his money in real estate and became rich. Jackson was a youth whom he educated to be a lawyer and who later married Gordon's daughter.

1925 for the entire coal-mining industry show a production of 105,477,000 tons of coal and a loss of 406 lives from accidents at the mines, thus indicating a fatality rate of 3.85 per million tons produced. For the corresponding period last year the production was 115,271,000 tons and the fatal accidents numbered 432, the fatality rate per million tons being 3.75.

Railroad Fuel Costs Low In January

Figures prepared by the Bureau of Coal Economics of the National Coal Association from a report of Class I railroads to the Interstate Commerce Commission show that these roads used 9,208,786 net tons of coal in locomotives in transportation train service in January of this year. The average cost of this coal, which represents the invoice price paid at the mine, plus any freight charges incurred by the consuming carrier, was \$2.82 for the entire country. In the Eastern district the average was \$2.86; in the Southern district, \$2.36, and in the Western district, \$3.08.

All of these averages show striking decreases from the figures for January, 1924. The decrease in cost for the entire United States was 45c. per net ton; for the Eastern district, 47c. per net ton; for the Southern district, 60c. per net ton, and the Western district, 25c. per net ton.

The saving to Class I railroads on locomotive fuel coal last January over the cost during the preceding January thus amounted to nearly \$4,000,000, which is at the rate of nearly \$50,000,000 per annum. The actual saving to the roads even exceeded this rate, since the quantity of bituminous coal used by Class I roads in locomotives in transportation train service constitutes less than 75 per cent of the soft coal consumed by all the railroads for all purposes.

Coal-Mine Fatalities During February, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

State	Underground										Shaft			Surface			Total by States										
	Falls of roof (coal, rock, etc.)	Falls of face or pillar coal.	Mine cars and locomotives.	Explosions of gas and coal-dust.	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.)	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1925	1924	
Alabama	1	3	1							5															5	8	
Alaska																										0	0
Arkansas	1	2								2															3	0	
Colorado										3															3	5	
Illinois	5									10															10	14	
Indiana										51															53	9	
Iowa	3																									3	2
Kansas																										0	0
Kentucky	3																									5	13
Maryland																										1	0
Michigan																										0	0
Missouri																										0	1
Montana																										0	0
New Mexico	2																									2	0
North Dakota																										0	0
Ohio	1																									2	11
Oklahoma																										1	0
Pennsylvania (bituminous)	10	5								16	1							1	2						18	31	
South Dakota																										0	0
Tennessee	3																									3	2
Texas																										0	0
Utah																										1	1
Virginia																										0	4
Washington	2																									2	1
West Virginia	12	7	2							22															24	28	
Wyoming																										0	2
Total (bituminous)	46	2	23							54	1	4					132	1						2	132		
Pennsylvania (anthracite)	16	3	4							8	2						40							1	51		
Total, February, 1925	62	5	27							57	9	1	6				172	1						2	184		
Total, February, 1924	78	18	32							3	7	1	5	1	2		155	2	1					2	183		

April Mine Shutdowns Are Most Numerous in Illinois and Indiana

Crop of "Unnecessary Closures for Effect on Labor" Is Hardly Up to Lewis' Prophecy

A great many mines in the four states of the Central Competitive Field shut down on or about April 1, but the movement was hardly the wholesale "unnecessary" closure which President John Lewis of the United Mine Workers prophesied would be made "for moral effect upon labor." Collapsing markets in all fields, especially in Illinois and Indiana, probably explain the shutdowns there. Several important operations in southern Illinois and a few more of the struggling mines of the Belleville district quit during the first week of the month. A few more in central Illinois ceased, leaving only fourteen running and nineteen idle. In Indiana thirteen with 20,000 tons capacity stopped out of 197 in the state, leaving 91 working part time. Nine mines of importance closed in Ohio and a scattering few in western Pennsylvania.

In Ohio nine mines shut down April 1 and several more are likely to close during the next few days, according to a canvass of important operators made on April 6. The most conspicuous suspension was that of four Rail & River Coal Co. mines—which have been supplying Grand Trunk Ry. fuel—at Bellaire, in the eastern Ohio field. The company will buy coal in the Island Creek region, it announced. The National Coal Co. closed five mines in the Cambridge and eastern Ohio districts and the Poston Consolidated Coal Co. shut down its Hocking district mine.

The Youghiogheny & Ohio Coal Co. is now working only five of its twelve mines in eastern Ohio, but those not running have been closed down at various times during the past three months. The Clarkson Coal Mining Co. is not operating its largest property, but no decision has been reached about shutting down others. Neither the M. A. Hanna Coal Co. nor the Maher Collieries Co. made any curtailment April 1. The middle district of Ohio has been running about 25 per cent and one or two suspensions are reported.

Spongy Tree Embedded In Indiana Coal Mine

Rolla Fallon, employed at the Glenn Ayr Mine, near Terre Haute, Ind., was digging coal with a pick 200 ft. below the surface and more than a quarter of a mile back in the mine, late in March, when he struck a substance that was firmly embedded in the coal. He picked at it until a piece, more than 1 ft. long, fell out, disclosing a well-developed tree trunk with limb formations still intact. The whole tree appears to be in the coal. He took the wood to Terre Haute and will send it to the state museum at Indianapolis for further scientific research. The wood oozes water and is spongy instead of petrified, as would be supposed. The find is attracting considerable attention from miners.

The lake shipping season, which will get a good start within two weeks, would be expected to give part of Ohio some running time, but the impending decision on rate cases to lower lake ports interferes greatly with the signing of contracts.

In western Pennsylvania, representing the eastern end of the Central Competitive Field, there are ninety-four mines belonging to the Pittsburgh Coal Producers' Association. Of these, sixty-one were shut down before April 1, but none of the thirty-three working mines is reported to have closed since that date. However, the thirty-three active ones during the last week in March produced only 26.5 per cent of the normal output of the ninety-four.

But in that district 40 per cent of the producing capacity does not belong to the association. The 40 per cent is made up almost entirely of mines owned by the industries which consume the coal. These "captive" mines are running at somewhat more than half their capacity. Thus it may be estimated that the entire Pittsburgh district is working now at approximately 40 per cent of its capacity, and that there was no wholesale shutdown in that territory on April 1.

Tax Measures in Limelight In Pennsylvania

The House Ways and Means Committee of the Pennsylvania Legislature on April 1 heard arguments for and against the Armstrong manufacturers' tax bill and for the Huber anthracite tax repealer. Nobody appeared in favor of the retention of the coal tax, and but two speakers were heard on the anthracite tax repealer.

John Whalen, of the Philadelphia & Reading Coal & Iron Co., opened the argument for the repealer. He said his company pays the state tax of five mills on capital stock, pays between 35 and 50 mills in local taxation and more than \$2,000,000 a year in coal taxes in Schuylkill, Northumberland and Columbia counties. In addition, he said, the valuation for taxing purposes on coal lands is constantly being increased.

David Fowler, a former member of the House, sponsor of the 1923 tax repealer and representing the United Mine Workers, said that the miners stood with the coal producers in desiring to see the tax abolished. He said that the tax keeps up the price of coal and drives consumers to seek other fuels, with the result that steady work for the miners is threatened. If the miners can be kept at work six days a week, he said, business generally in the anthracite district will be good.

George C. Merritt, representing, he said, 98 per cent of the anthracite industry of the state, opened the argument for the manufacturers' tax bill. He said it would equalize taxation and make unnecessary the tax on coal. John A. McSparran, former State Master of the Grange, speaking for the farmers, asserted that real estate today is bearing the burden of taxation in the state, and that the Legislature, which cannot tax real estate directly, does so when it increases the cost of the schools and forces higher taxes. Fred C. Brenckman, secretary of the State Grange, said the tax would not force industries out of the state nor affect capital investments.

Robert Haight, of the State Chamber of Commerce, opposed the bill, saying that new industries would not be attracted to the state, and J. M. Hasselvine, of the Johnstown Chamber of Commerce, said the bill, if enacted into law, would reverse the state's policy of encouraging industries. Berne H. Evans, of Harrisburg, representing the Pennsylvania Manufacturing Association, said that nine governors of Pennsylvania have had the question of taxing the manufacturers before them and have not endorsed the tax.

The committee is expected to meet within a few days to make a report. According to Capitol rumor the bills may be passed by the House but defeated in the Senate.

The New York Public Service Commission has approved switching rates by the Southern New York Ry. on anthracite, carloads (minimum weight 60,000 lb.), from Delaware & Hudson interchange tracks at Oneonta to Junction Siding (Oneonta) of 38c. per gross ton; new rate; effective April 16, 1925. —P. S. C. No. 13.



How Water Tank Collapsed at New Orient When Tornado Struck It

The force of the storm seemed to lift and twist the tank from its steel tower. Shop and store buildings of the mine are in the background with roofs and part of their walls caved in. The windowless building on the right is the office of the Chicago, Wilmington & Franklin Coal Co.

Viewpoints of Our Readers

Calcium Chloride for Binding Coal Dust

Does not Dry Out but Holds Its
Moisture—When It Is Saturated
It Cannot Dry the Mine Air

I have read with much interest the letter in the March 5 issue of *Coal Age*, with reference to the use of salt for the prevention of coal-dust explosions in mines. Salt has a slight affinity for moisture, and probably a road bound by salt crystals, as suggested in the article in the daily paper quoted, would remain reasonably free from dust. This company has never sold pure salt to allay the dust in coal mines. It has, however, sold a calcium chloride and salt mixture in granular form for this purpose. In fact it has had some customers who have used it with success. The value of this mixture was due almost entirely to the calcium chloride it contained, because that material will absorb many times as much moisture as salt.

It will no doubt be interesting to recount, however, that many thousands of tons of calcium chloride are used annually for the allaying of dust on highways and the prevention of wear thereon. Some of our most progressive states, with up-to-date highway departments have standardized on this material for the allaying of dust and prevention of wear on gravel, sand, clay, dirt and water-bound macadam roads and are obtaining extraordinary results from its use.

ROAD TESTS SHOW ADVANTAGES

It has been found that if $1\frac{1}{2}$ lb. per square yard of granulated calcium chloride is sprinkled on a road at the opening of summer and about $\frac{1}{4}$ lb. per square yard added a month or two later, it will keep the road free from dust during the late spring, summer and early fall period and that moreover, the life of the road is materially prolonged, for experience has shown that the action of the automobile tire in sucking up the dust from the dry road and blowing it away rapidly disintegrates the roads.

If granulated calcium chloride is sprinkled over the road bed and ribs

in the coal mine in the same manner and in about the same quantity as is applied to highways, the same satisfactory results will be obtained. This calcium chloride can be sprinkled over the mines with the same readiness and with no more expense than rock dust, in so far as the actual labor is concerned. As already indicated it takes about $2\frac{1}{2}$ lb. of calcium chloride per square yard to keep an ordinary highway in condition for say six months. This would mean possibly 4 lb. per year, for, after the roadway is once sprinkled with the $1\frac{1}{2}$ lb., the $\frac{1}{4}$ lb. application will be sufficient.

This granulated calcium chloride will cost about $1\frac{1}{2}$ c. per lb., or \$30 per ton delivered in carloads to points east of the Mississippi River, and the maximum cost for the necessary calcium chloride for say a 16 ft. entry would be about 10c. per lineal foot, per year.

FIRST WET ROADS AND RIBS

You will find that calcium chloride will take up an enormous quantity of water, far more than salt. As regards the remarks of the editor of *Coal Age* that salt (and therefore calcium chloride to a greater extent) will rob the air of its moisture and make those portions of the mine not salted drier than ever, with resultant danger, it may be explained that before the calcium chloride is sprinkled on the roads and ribs, they should be sprinkled with a small quantity of water, so that when the calcium chloride is broadcast, it will take up the water previously sprinkled and thereafter remain moist. Calcium chloride is different from salt in that when exposed to the hottest sun on the driest day it will not give up enough moisture to form crystals and therefore it can by no possibility take up a material quantity of moisture from the mine, with resulting drying effect. The solution after once made remains in practically the same state.

The first cost of a calcium chloride

application may be higher than that of sprinkling pure water or of rock dusting, but the cost per year should be less and it should be more effective than either.

J. Q. DICKENSON & CO.
Malden, W. Va.

Open Light Should Be Banned

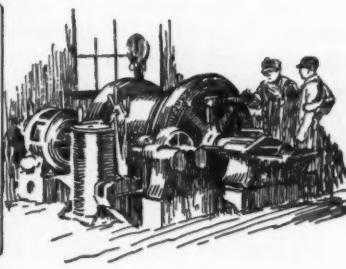
I cannot but take issue with your editorial dated March 5, regarding the use of electric mine lamps, etc., nor can I comprehend the points that you make, as every coal-mining man understands the phenomena of mine explosions and realizes fully that coal dust, itself, can be ignited by an open light. The recent Sullivan, Ind., disaster is another shining example of the fallacy of using open lights in bituminous coal mines.

It is unpardonable to use open lights in any bituminous coal mine which has ever produced the slightest trace of gas, and any one of them is liable to produce gas in explosive quantities. In other words, it is more often the "so-called" nongaseous mines in which gas ignitions occur, and these ignitions are, of course, the common source of practically all coal-dust explosions. Some overly optimistic mining men believe that a well-planned ventilating system is the panacea for accumulations of gas in dangerous quantities, but experience proves that the best controlled system will not provide for strong feeders or pockets of occluded gas under pressure, and in fact often fails, due to unavoidable accidents or carelessness on the part of some employee.

I firmly believe that the time has come when our Federal Bureau of Mines and the mining departments of our various coal-mining states, knowing all the facts in the case, must take a positive stand against the use of all types of open lights in bituminous coal mines.

Furthermore, in view of my rather extensive metal-mining experience, I feel free in commenting that the next five years will see the introduction of closed lamps (electric cap lamps) in metal mines. Open lights have proved to be a menace which potentially increases the hazard of practically all underground mining operations. I base my views in this regard not alone on safety, but on efficiency and economy as well.

EDWARD STEIDLE,
Course Supervisor,
Carnegie Institute of Technology,
Pittsburgh, Pa.



Practical Pointers For Electrical And Mechanical Men

Equalizer Switch Opens When Breaker Acts, Thus Preventing Flashing

At one of our operations two voltage to be generated in the machine direct-current steam-driven generators, have been installed and are operated in parallel. One is of the distributed winding type and the other an old timer, a non-interpole machine. The latter has a speed of 400 r.p.m. and is belt-driven, the former has a speed of 200 r.p.m. and is direct-connected. Both machines are of 175-kw. capacity and 500 volts. Offhand the reader will say that it must be a job to hold them together. On the contrary, although it took much experimental work before the

In order to stop this flashing it was thought advisable to place in the equalizer busbar a contactor which would be opened whenever either circuit breaker opened. The diagram Fig. 2 shows how the contactor was connected. The operating circuit of this contactor passes through two auxiliary switches each located behind a main breaker so that when the breaker releases, the auxiliary switch will open the contactor in the equalizer circuit. This scheme eliminated the flashing, but it was found that it was almost impossible to adjust the auxiliary switches so that the contactor would open at the right time. In order to operate correctly with no flashing the contactor had to open before the main breaker had actually broken its arc. To do this, as one can readily see, the auxiliary switches which control the holding circuit of the contactor would have to open at the very instant at which the laminated brush of the circuit breaker began to spring away from the contact blocks. These small switches operated with difficulty, for after a few days of good service the springs by which they were held or the spring contacts

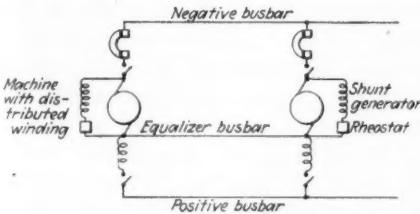


Fig. 1—With This Connection One of the Machines Would Flash

With the two generators connected as shown, the usual way of paralleling two machines, the unit with the distributed winding flashed when one of the main circuit breakers opened.

proper lead resistances were determined, they operate together quite well dividing the load equally.

However, one feature in regard to these units is particularly interesting. Both machines are connected to the main busbars through single-pole circuit breakers placed in the negative leads. The accompanying diagram, Fig. 1, shows the connections. With this arrangement it is found that whenever either circuit breaker opened on overload the machine with the distributed winding would flash to ground. This is explained by the fact that this type of generator has a high paralleling tendency and when the load is thrown off the machine the rapid change in the series field due to the shifting of the load and the transfer of an equalizing current in the equalizer bus causes an exceptionally high

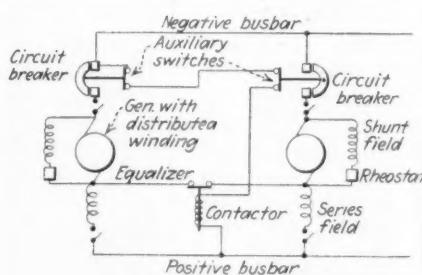


Fig. 2—Equalizer Switch Cures Flashes But Auxiliary Switches Fail

The first attempt to remedy the flashing of the generator with the distributed winding consisted of placing a contactor in the negative lead. The contactor was controlled by auxiliary switches behind the main circuit breakers. When either breaker opened it broke the operating circuit of the contactor and opened the equalizer switch. This arrangement was tried to obviate the necessity of buying special two-pole circuit breakers.

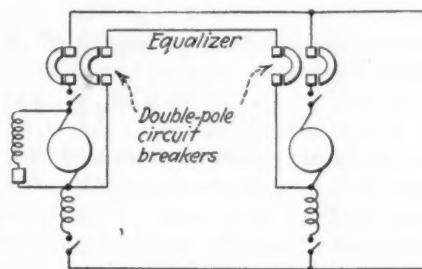


Fig. 3—Two-Pole Breakers Prevent All Flashing

Difficulties with the auxiliary switches controlling the equalizer contactor necessitated the use of double-pole circuit breakers. One pole of each breaker is connected in the equalizer circuit between the two machines.

would change in strength causing the contactor to function badly. It finally became necessary to place on each generator a double-pole circuit breaker—one pole of which was connected in the negative lead and the other pole in the equalizing busbar. Since the installation of the latter the machines have ceased to flash.

ANTHRACITE ENGINEER.

Device Keeps Binding Wire Under Uniform Tension

In twenty-four out of twenty-five mine repair shops where armature winding is done the tension device, used with the binding wire, consists of two blocks of hard wood or fiber between which the wire is clamped with sufficient force to produce the desired tension. Anyone using this kind of device will admit it does not accomplish what the ideal arrangement should; it fails to maintain a uniform tension on the binding wire.

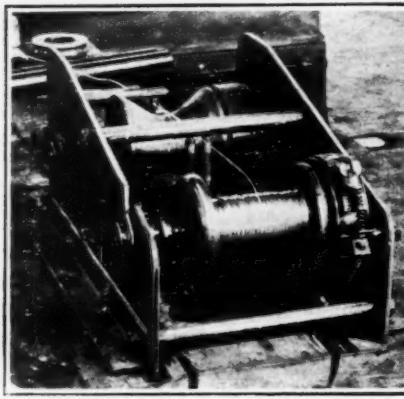
Ability to keep a uniform tension, and ease of adjustment, are important features both from the standpoint of the time required and the quality of the work done. It is not unusual to see a binding wire break while being applied, this failure occurring because the tension suddenly became too great.

Many winders do not realize what a great crushing force will result from a band of twenty or thirty turns of wire, each one of which has been put on at a tension near the breaking strain. The bands should

be snug but should not crush and distort the coils. A common result of coil banding with too much tension is that as each turn is applied, the coils sink down, with the result that most of the band is loose, only the last part applied properly bearing on the coils.

TENSION EASILY CONTROLLED

Referring to the illustration the reader will see the binding-wire tension device which was made and is being used in the shop of the Raleigh Coal & Coke Co., of Raleigh, W. Va. J. E. Weidensall, who is in charge of the armature winding, explained that this device operates as perfectly as any that he has used. The metal drum which at the smallest part is about 4 in. in diameter has at the right hand end a brake band fitted



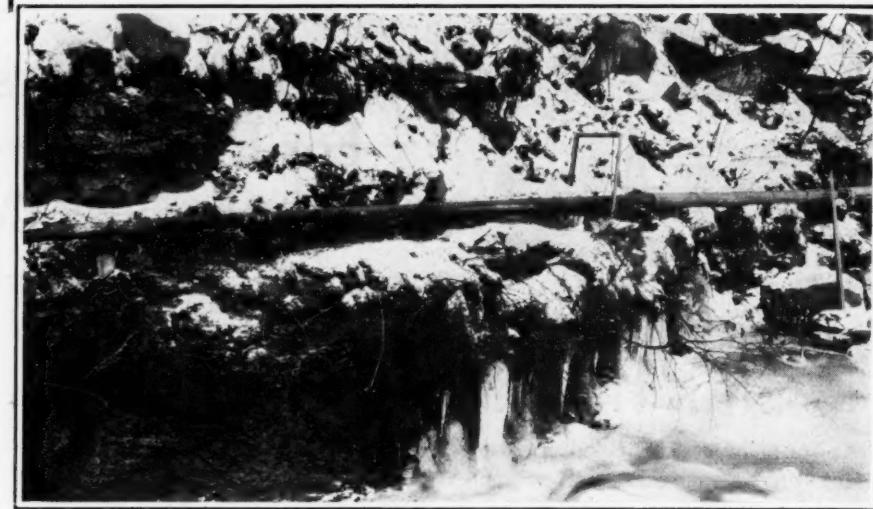
Saves Time and Improves Work

This home-made device, which uses a band brake for maintaining a uniform tension on armature binding wire, was seen in the shop of the Raleigh Coal & Coke Co.

with asbestos friction lining such as used on automobiles. The wire tension is controlled by the adjustment of a wing nut on this brake. Part of the nut can be seen just over the top of the band.

WIRE DOES NOT SLIP

The arbor, on which the spool is mounted, also is fitted with a brake which is adjusted to put only a slight tension on the wire. Sufficient turns, usually four to six, are carried around the drum so as to prevent slipping, and on the far side of the drum is a small spring-actuated fiber clamp which prevents the wire from loosening and uncoiling on the drum whenever the wire is slackened. The tension device is mounted on a heavy work bench and set in proper alignment with the lathe in which the banding is done. The coil spring and slotted frame on the left of the device provide a quick and convenient means of inserting new spools.



One Coal Company thus Writes in Red Ink

This unprotected section of a steam line melts the surrounding snow and ice with a consequent heavy tax on the boilers which supply a nearby town with steam.

Derrick Makes Unloading Safe and Speedy

About the mines, but particularly at the shops where heavy machine parts must frequently be loaded onto trucks or wagons or be unloaded therefrom, some form of crane or derrick soon pays for itself. The accompanying illustration shows a device of this kind originally built at the Gary, (W. Va.) shops of the United States Coal & Coke Co., to facilitate the building of mine cars but for some years past employed chiefly in the handling of heavy machine parts to and from wagons, carts and autotrucks.

In general construction and appearance this device much resembles a type of hay stacking derrick once fairly common on the farms of the Middle West. It consists of two end

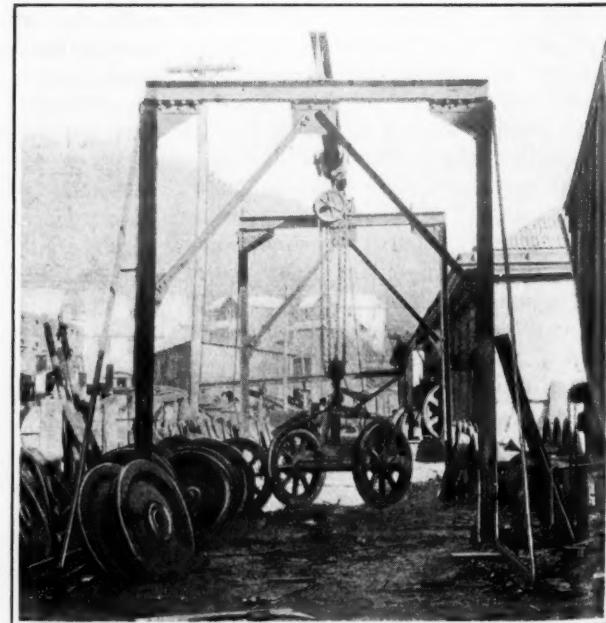
frames between which extends a track beam. To this beam is attached a trolley or traveler from which hangs a tackle or chain block. The lift or vertical distance through which a load may be hoisted by this device is about 10 ft., which is ample for the work intended.

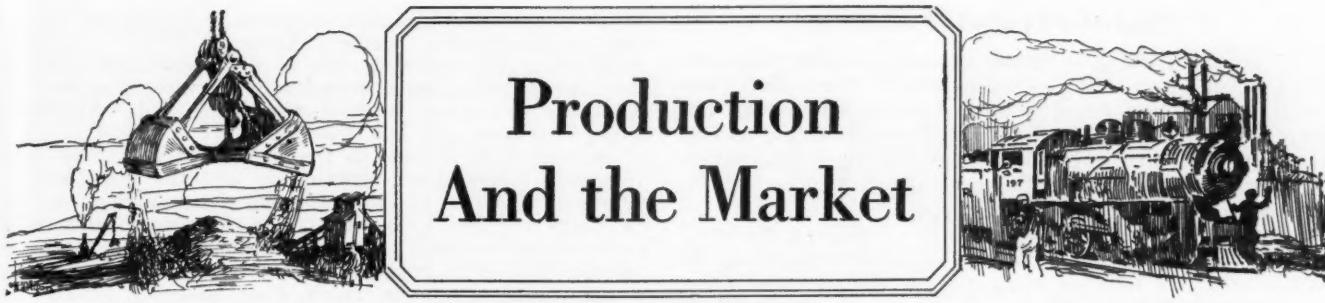
The end frames of this derrick, which are about 9 ft. wide in the clear and 24 ft. apart, are built up of angles and I-beams, and are braced outward both longitudinally and transversely. The trolley track is a 12-in. I-beam, and the trolley travel is about 22 ft. The trolley itself is fitted with a 4-ton Cyclone chain block and is traversed by hand.

Practically all the material entering into the construction of this derrick was second-hand or had been previously used for some other purpose.

Improvised Derrick

This picture shows the derrick with a pair of drivers from an electric locomotive suspended from the chain blocks. It will be readily seen with what ease these drivers, or any other heavy piece of machinery, can be raised and a wagon or truck backed under them. The reverse process is followed if the part is to be unloaded.





Production And the Market

Dullness in Soft-Coal Markets Unrelieved; Price Index Registers Slight Gain

Hope deferred has been the lot of the soft-coal industry for so long that all faith in omens has disappeared, and with reason, for business continues to go from bad to worse. Midwest operators find it increasingly difficult to move coarse coals, sales being confined to a carload here and there to a few retailers whose stocks are running low. Screenings were in fair demand during most of last week, but prices remained comparatively low because of a large influx of Kentucky mine run, mostly strip coal. Several more Illinois mines have closed indefinitely, and those that remain open are working short time. Aside from the signing of some fairly large annual contracts and some still pending the market in Kentucky maintains the quiet tone characteristic of the last few weeks, prices holding steady. Output in West Virginia is still down to about 50 per cent in all fields. Many contracts are behind schedule—only a few railroads having signed up—and spot buying is slow. Precise information is lacking thus far on the effect of the strike called by the union.

In the absence of official figures, estimates of stocks on the docks at the head of the lakes place them at the low level of 575,000 tons of free bituminous, so everyone is set for heavier shipments when navigation opens. Favorable freight rates are expected to help consumption and Pocahontas will be pushed to an extent that probably will cause a decrease in the use of hard coal. Milwaukee docks are serving industrial and weakening domestic demand from fading stocks while awaiting the opening of the new season. Shutdowns are frequent in Kansas, Arkansas and Oklahoma, where operators are having difficulty in moving anything but screenings. Colorado also reports lower output with a number of closings. Interest is high in Utah over the prospective signing of a contract by the Utah Copper Co. for 400,000 tons of coal per year for five years.

Slack continues to be the strongest feature of the

Cincinnati market, where a weird variety of prices prevails as the result of stagnation having backed up coal to the mine tracks. River business is brisk, however, as the water stage is excellent. Trade at Columbus is apathetic and eastern Ohio is further in the depths. There is practically no market at Pittsburgh, except for slack, which is climbing. Operation is decreasing, but no precise information is at hand on the actual rate since the new coal year opened. General apathy prevails in Eastern markets, all branches of the trade finding it hard to force coal on reluctant buyers.

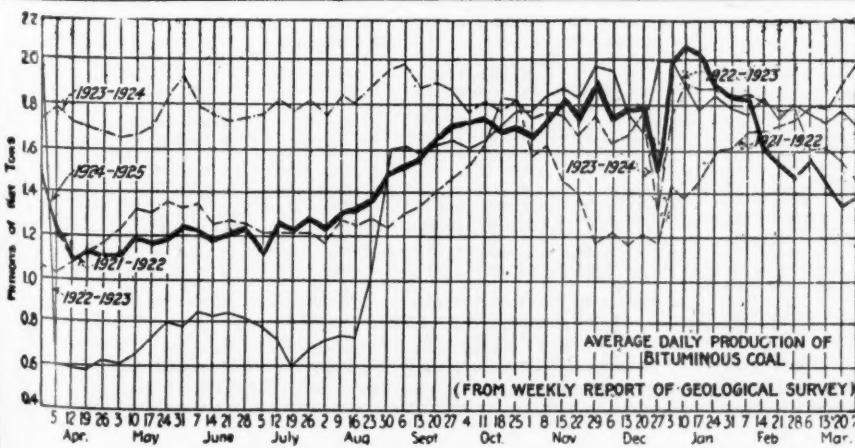
Hard Coal Moves Better

Retailers have followed the lead of the producers in reducing the prices of hard coal and the campaign for early buying is now on in earnest. Results thus far, however, are scarcely noticeable. Considerable carry-over remains to be cleared up. Stove is in heaviest demand, but the call for egg has picked up. The steam sizes are in good shape.

Coal Age Index of spot prices of bituminous coal stood on April 6 at 162, the corresponding price for which is \$1.96, compared with 161 and \$1.95 last week.

Dumpings of coal for all accounts at Hampton Roads in the week ended April 2 totaled 406,945 net tons, compared with 399,686 tons in the preceding week.

Output of bituminous coal during the week ended March 28 is estimated by the Geological Survey at 8,350,000 net tons, an increase of 67,000 tons over the previous week, as shown by revised figures. Total output for the coal year is estimated at 470,862,000 net tons, compared with 561,212,000 tons in the preceding year. Anthracite production during the week ended March 28 was 1,640,000 net tons, compared with 1,513,000 tons the week before. Total output for the coal year is estimated at 88,100,000 net tons, against 91,700,000 tons in 1923-4.



Estimates of Production

(Net Tons)

BITUMINOUS

	1923-1924	1924-1925
Mar. 14.....	9,943,000	8,641,000
Mar. 21 (a).....	9,573,000	8,283,000
Mar. 28 (b).....	9,122,000	8,350,000
Daily average.....	1,520,000	1,392,000
Coal yr. to date (c).....	557,811,000	467,959,000
Daily av. to date.....	1,836,000	1,537,000

ANTHRACITE

	1923-1924	1924-1925
Mar. 14.....	1,941,000	1,656,000
Mar. 21.....	1,804,000	1,513,000
Mar. 28 (b).....	1,942,000	1,640,000

COKE

	1923-1924	1924-1925
Mar. 21.....	315,000	226,000
Mar. 28 (b).....	296,000	221,000

(a) Revised since last report. (b) Subject to revision. (c) Minus one day's production to equalize number of days in the two years.

Midwest Trade Is Slower

Illinois and Indiana operators are encountering more and more difficulty in moving coarse coals. Here and there retail dealers are found whose reserves apparently are running a trifle low, and these retailers are willing to buy a car or so, but there is not enough buying of this nature to afford operators relief. During most of the week screenings were in fair demand, but excepting in one or two instances prices were reasonable indeed considering the small supply. Some Franklin County 2-in. screenings were sold at \$2.25, but the tonnage was not great enough to influence the market. Indiana No. 5 screenings were \$1.50@\$1.75. This also was true of central Illinois screenings. Prices have remained so comparatively low because there is a large tonnage of western Kentucky mine run coming into Chicago on consignment. This consignment tonnage is decreasing, however, and is mostly strip coal.

On April 1 there appeared to be a tendency on the part of the smokeless operators to strengthen their prices. A great many of them are holding for \$3 for the trade but some ask \$3.25; these prices, of course, cover fancy lump and egg prepared sizes. Eastern Kentucky block coals are \$2@\$2.25. This coal does not find a market in Chicago,

but is bought by Chicago wholesalers to distribute throughout the Northwest. Eastern Kentucky egg is strong at \$1.85@\$2, with operators not at all anxious to book the business on this basis, principally because most eastern Kentucky mines are jammed with block coal. Anthracite shipments decreased last week.

There is little activity in the Carterville field. On April 1 several mines closed indefinitely and the few that are running, with one or two exceptions, are getting one and two days a week. Railroad tonnage is light and all sizes of coal are on contract. Screenings are held back for better prices. The strip mines seem to be meeting all kinds of competition. There is much dissatisfaction among the miners and large numbers are leaving for Kentucky, principally the single men.

In the Mt. Olive field things are unusually quiet. A little railroad coal is moving out and a little domestic to the Northwest, with steam going on contracts. April 1 prices were cut in this field to \$2.50 on domestic sizes. Standard is unusually quiet. Railroad tonnage in that field is so light practically nothing is moving except screenings.

The St. Louis market is unusually quiet. A little stuff is moving in small lots, but dealers are pretty well loaded up. A little steam coal is moving in wagonload lots and carload coal is in fairly good demand because there is nothing

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	April 7, Mar. 23 Mar. 30, Apr. 6,				Midwest	Market Quoted	Apr. 7, Mar. 23, Mar. 30, Apr. 6,			
		1924	1925	1925	1925†			1924	1925	1925	1925†
Smokeless lump...	Columbus...	\$3.35	\$3.10	\$3.10	\$3.00@ \$3.25	Franklin, Ill. lump...	Chicago...	\$2.85	\$2.75	\$2.60	\$2.50@ \$2.75
Smokeless mine run...	Columbus...	2.35	1.90	1.90	1.75@ 2.10	Franklin, Ill. mine run...	Chicago...	2.35	2.35	2.35	2.25@ 2.50
Smokeless screenings...	Columbus...	1.85	1.15	1.20	1.10@ 1.30	Franklin, Ill. screenings...	Chicago...	2.15	1.95	1.95	2.00@ 2.25
Smokeless lump...	Chicago...	3.10	3.10	2.85	2.75@ 3.00	Central, Ill. lump...	Chicago...	2.60	2.35	2.35	2.25@ 2.50
Smokeless mine run...	Chicago...	2.10	1.75	1.75	1.75@ 2.00	Central, Ill. mine run...	Chicago...	2.10	2.20	1.95	2.00@ 2.25
Smokeless lump...	Cincinnati...	3.35	3.25	2.85	2.75@ 3.00	Central, Ill. screenings...	Chicago...	1.65	1.90	1.90	1.80@ 2.00
Smokeless mine run...	Cincinnati...	2.10	2.00	1.85	2.00	Ind. 4th Vein lump...	Chicago...	2.85	2.60	2.60	2.50@ 2.75
Smokeless screenings...	Cincinnati...	1.85	1.50	1.50	1.50	Ind. 4th Vein mine run...	Chicago...	2.35	2.35	2.10	2.00@ 2.25
*Smokeless mine run...	Boston...	4.20	4.35	4.35	4.20@ 4.50	Ind. 4th Vein screenings...	Chicago...	1.95	1.95	1.95	2.00@ 2.15
Clearfield mine run...	Boston...	2.05	1.95	1.95	1.75@ 2.20	Ind. 5th Vein lump...	Chicago...	2.35	2.30	2.10	2.00@ 2.25
Cambria mine run...	Boston...	2.45	2.30	2.30	2.10@ 2.40	Ind. 5th Vein mine run...	Chicago...	2.10	2.10	1.95	1.90@ 2.00
Somerset mine run...	Boston...	2.10	2.10	2.10	1.90@ 2.35	Ind. 5th Vein screenings...	Chicago...	1.65	1.80	1.70	1.60@ 1.80
Pool 1 (Navy Standard)...	New York...	2.85	2.65	2.65	2.50@ 2.85	Mt. Olive lump...	St. Louis...	2.85	2.85	2.85	2.50
Pool 1 (Navy Standard)...	Philadelphia...	3.00	2.65	2.65	2.50@ 2.85	Mt. Olive mine run...	St. Louis...	2.50	2.35	2.35	2.25
Pool 1 (Navy Standard)...	Baltimore...	2.10	2.10	2.10	2.00@ 2.25	Mt. Olive screenings...	St. Louis...	1.50	1.75	1.75	1.75
Pool 9 (Super. Low Vol.)...	New York...	2.20	2.05	2.05	1.90@ 2.25	Standard lump...	St. Louis...	2.35	2.35	2.35	2.25
Pool 9 (Super. Low Vol.)...	Philadelphia...	2.20	2.00	2.00	1.85@ 2.20	Standard mine run...	St. Louis...	1.95	1.80	1.80	1.75@ 1.90
Pool 9 (Super. Low Vol.)...	Baltimore...	2.00	1.85	1.85	1.80@ 2.00	Standard screenings...	St. Louis...	2.20	1.60	1.60	1.65@ 1.75
Pool 10 (H.Gr. Low Vol.)...	New York...	1.85	1.80	1.80	1.65@ 2.00	West Ky. block‡...	Louisville...	2.35	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr. Low Vol.)...	Philadelphia...	1.85	1.65	1.65	1.55@ 1.80	West Ky. mine run...	Louisville...	1.50	1.35	1.35	1.25@ 1.50
Pool 10 (H.Gr. Low Vol.)...	Baltimore...	1.75	1.75	1.75	1.70@ 1.85	West Ky. screenings...	Louisville...	2.20	1.25	1.25	1.25@ 1.30
Pool 11 (Low Vol.)...	New York...	1.40	1.55	1.55	1.40@ 1.70	West Ky. block‡...	Chicago...	2.60	1.85	1.85	1.75@ 2.00
Pool 11 (Low Vol.)...	Philadelphia...	1.50	1.55	1.55	1.50@ 1.60	West Ky. mine run...	Chicago...	1.10	1.25	1.30	1.15@ 1.50
Pool 11 (Low Vol.)...	Baltimore...	1.50	1.50	1.50	1.45@ 1.55						

High-Volatile, Eastern

Pool 54-64 (Gas and St.)...	New York...	1.50	1.50	1.50	1.35@ 1.60
Pool 54-64 (Gas and St.)...	Philadelphia...	1.55	1.45	1.45	1.40@ 1.50
Pool 54-64 (Gas and St.)...	Baltimore...	1.60	1.70	1.70	1.65@ 1.75
Pittsburgh acid gas...	Pittsburgh...	2.40	2.40	2.40	2.30@ 2.50
Pittsburgh gas mine run...	Pittsburgh...	2.25	2.00	2.00	1.95@ 2.10
Pittsburgh mine run (St.)...	Pittsburgh...	1.85	1.80	1.80	1.75@ 1.90
Pittsburgh slack (Gas)...	Pittsburgh...	1.30	1.35	1.35	1.60@ 1.70
Kanawha lump...	Columbus...	2.55	2.10	2.10	2.00@ 2.25
Kanawha mine run...	Columbus...	1.65	1.50	1.50	1.40@ 1.60
Kanawha screenings...	Columbus...	1.30	80	95	90@ 1.00
W. Va. lump...	Cincinnati...	2.25	2.10	2.00	1.75@ 2.25
W. Va. gas mine run...	Cincinnati...	1.35	1.40	1.35	1.25@ 1.40
W. Va. steam mine run...	Cincinnati...	1.35	1.30	1.25	1.15@ 1.30
W. Va. screenings...	Cincinnati...	.90	.90	1.00	.90@ 1.15
Hocking lump...	Columbus...	2.55	2.35	2.25	2.15@ 2.40
Hocking mine run...	Columbus...	1.65	1.45	1.45	1.35@ 1.60
Hocking screenings...	Columbus...	1.30	1.05	1.15	1.10@ 1.25
Pitts. No. 8 lump...	Cleveland...	2.35	2.30	2.25	1.85@ 2.65
Pitts. No. 8 mine run...	Cleveland...	1.80	1.80	1.75	1.75@ 1.80
Pitts. No. 8 screening...	Cleveland...	1.20	1.35	1.40	1.40@ 1.50

South and Southwest

Big Seam lump...	Birmingham...	2.60	2.35	2.35	2.25
Big Seam mine run...	Birmingham...	2.00	1.75	1.75	1.50@ 2.00
Big Seam (washed)...	Birmingham...	2.20	1.85	1.85	1.75@ 2.00
S. E. Ky. block‡...	Chicago...	2.35	2.10	2.10	2.00@ 2.25
S. E. Ky. mine run...	Chicago...	1.60	1.35	1.35	1.40@ 1.75
S. E. Ky. block‡...	Louisville...	2.60	2.10	2.10	2.00@ 2.25
S. E. Ky. mine run...	Louisville...	1.50	1.35	1.35	1.25@ 1.50
S. E. Ky. screenings...	Louisville...	1.05	.95	.95	1.00@ 1.25
S. E. Ky. block‡...	Cincinnati...	2.35	2.25	2.10	2.00@ 2.25
S. E. Ky. mine run...	Cincinnati...	1.35	1.35	1.30	1.15@ 1.40
S. E. Ky. screenings...	Cincinnati...	.85	1.05	1.00	.90@ 1.25
Kansas lump...	Kansas City...	4.50	4.25	4.25	4.00@ 4.50
Kansas mine run...	Kansas City...	3.25	2.85	2.85	2.75@ 3.00
Kansas screenings...	Kansas City...	2.50	2.75	2.75	2.75

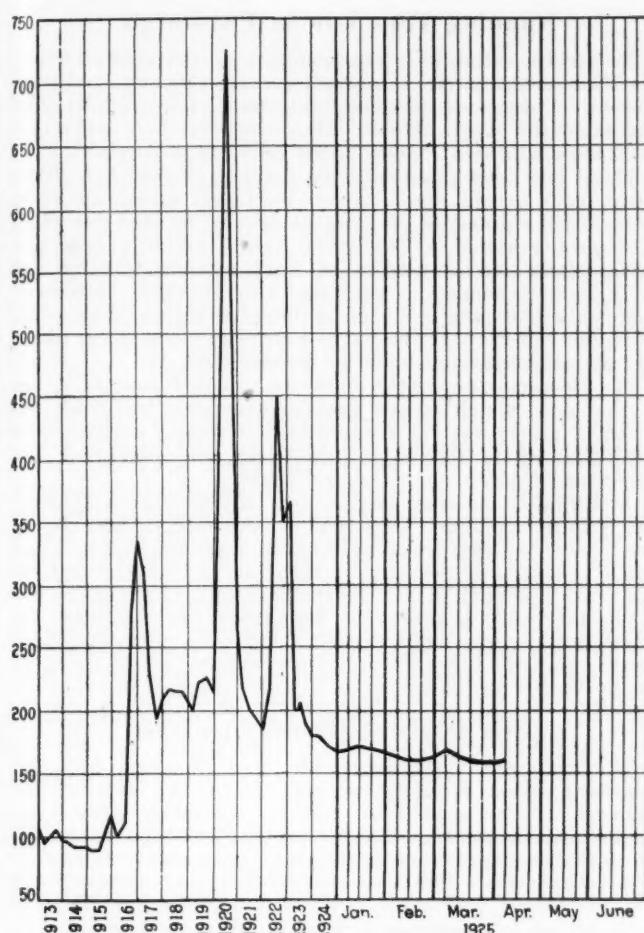
*Gross tons, f.o.b. vessel, Hampton Roads. †Advances over previous week shown in **heavy type**; declines in **italics**.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

Market Quoted	Freight Rates	April 7, 1924		March 30, 1925		April 6, 1925†	
		Independent	Company	Independent	Company	Independent	Company
Broken...	New York...	\$2.34		\$8.00@ \$8.65		9.15	
Broken...	Philadelphia...	2.39		8.50@ \$8.65			9.15
Egg...	New York...	2.34	\$7.75@ \$8.25	8.25@ \$8.50	8.25@ \$8.50	8.25@ \$8.50	8.50@ \$8.50
Egg...	Philadelphia...	2.39	8.25@ 9.40	8.60@ 8.65	8.45@ 8.50	8.30@ 8.50	8.30@ 8.50
Egg...	Chicago*	5.06	7.59@ 7.81	7.65@ 7.72	8.17@ 8.40	8.08	7.76@ 8.30
Stove...	New York...	2.34	8.50@ 9.00	8.25@ 8.85	8.25@ 8.75	8.50@ 8.90	8.50@ 8.75
Stove...	Philadelphia...	2.39	8.60@ 9.50	8.65@ 8.85	8.85@ 8.90	8.75@ 8.90	8.50@ 8.90
Stove...	Chicago*	5.06	7.90@ 8.03	7.81@ 8.75	8.80@ 9.00	8.53@ 8.65	8.10@ 8.55
Chestnut...	New York...	2.34	8.50@ 9.00	8.25@ 8.75	8.25@ 8.75	8.25@ 8.50	8.25@ 8.50
Chestnut...	Philadelphia...	2.39	8.60@ 9.50	8.65@ 8.75	8.45@ 8.50	8.40@ 8.50	8.50@ 8.35
Chestnut...	Chicago*	5.06	7.81@ 7.94	7.72@ 7.95	8.61@ 9.00	8.40@ 8.41	7.91@ 8.25
Pea...	New York...	2.22	4.50@ 5.00	5.50@ 6.00	4.25@ 5.00	5.00@ 5.50	4.25@ 5.00
Pea...	Philadelphia...	2.14	5.00@ 6.75	6.00	5.00@ 5.30	5.25@ 5.30	5.00@ 5.30
Pea...	Chicago*	4.70	5.13@ 5.36	5.36@ 5.55	5.36@ 5.75	5.36@ 5.95	4.91@ 5.36
Buckwheat No. 1...	New York...	2.22	2.25@ 2.75	3.00@ 3.15	2.00@ 2.75	2.50@ 3.00	2.00@ 2.75
Buckwheat No. 1...	Philadelphia...	2.14	2.75@ 3.00	3.00	2.50	2.50	2.50@ 2.50
Rice...	New York...	2.22	1.75@ 2.25	2.00@ 2.25	1.90@ 2.15	2.00	1.90@ 2.25
Rice...	Philadelphia...	2.14	2.00@ 2.25	2.25	2.00	2.00	2.00@ 2.00
Barley...	New York...	2.22	1.50@ 1.75	1.50	1.35@ 1.50	1.50	1.35@ 1.50
Barley...	Philadelphia...	2.14	1.50	1.50	1.50	1.50	1.50
Birds-eye...	New York...	2.22	1.60@ 1.75	1.60	1.40@ 1.60	1.60	1.40@ 1.60

* Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in **italics**.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925	1924
April 6	162	161
March 30	163	171
March 23		
April 7		

Index 162 161 163 171
 Weighted averaged price \$1.96 \$1.95 \$1.97 \$2.07

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

available in the way of screenings. Both steam and domestic for the country are quiet. The higher grade fuels such as smokeless, anthracite and coke are at a standstill.

Kentucky Signs Some Contracts

Some fairly large annual contracts have been signed and a number are pending, but aside from this there has not been much activity in Kentucky fields for several weeks. Demand for domestic continues to slump as a result of fine weather. This is resulting in small production of screenings, priced at \$1. Practically no high-grade screenings have been offered at under \$1.25.

In western Kentucky production is light, although there has been a little railroad buying for immediate delivery. In eastern Kentucky it is reported that the Consolidation mines have taken on some fairly good business in the Elkhorn fields, and that section is reported as somewhat busier. The Hazard and Harlan as well as low southeastern Kentucky sections are finding business slow. Tonnage is better now under non-union conditions than it was a year ago, however.

Prices have been quite steady in the Kentucky fields over the past few weeks, with lump and egg starting at \$1.75 a ton, and going to around \$2, with some prime 4-in. eastern Kentucky domestic quoted as high as \$2.25. Nut coals are \$1.50@\$1.75; mine run, \$1.25@\$1.50, and screenings, \$1@\$1.30. Indications are that screenings will soon be at a minimum of \$1.25 and mine run at around a minimum of \$1.35@\$1.50, unless there is larger production of prepared than is expected early in the season, and such production is not likely unless Lake movement is early and heavy.

Northwest Ready for New Season

New Duluth anthracite prices, which went into effect April 1, are as follows: Egg, \$12.70; stove, \$13.10; nut, \$12.95; pea, \$10.15, and buckwheat, \$6.50. This is a cut of 50c. from the price which has been common all year. The decrease has caused no noticeable increase in sales. The weather has been balmy.

Stocks on docks on April 1 have not as yet been officially announced, but estimates, which probably are nearly correct, place them at only 575,000 tons of free bituminous. This is small for this time of year, especially when it is divided among 25 docks. It is probable that a cold snap, which is not looked for, might clear a great deal of this coal out before the opening of navigation, but even if it is not cleared away the docks have no complaint. They have done well.

Everyone is sitting around waiting for the opening of navigation, probably about April 15 this year, which is early. The ice is breaking up near Duluth and the lake is full of floes. This comes in with the wind, and it is possible that a tie-up will occur this year as it did last, when more than 20 boats were held for days off the harbor mouth by the ice. Dock men here are making plans for heavier shipments next year than this. They figure that the favorable freight rates will cause heavier consumption in the surrounding territory. Pocahontas also will be pushed, which undoubtedly will mean a falling off in the consumption of hard coal. Coal freights may be cut from 50c. to 45c. between lower lake ports and Duluth.

Milwaukee coal men await the new season. Managers of docks are preparing for fresh supplies while serving the industries and the now lightening demand from householders with tag ends of stocks. Seventeen cargoes of coal are afloat at lower lake ports, awaiting the opening of inter-lake channels. Eight of the laden steamers are bound for Milwaukee docks—three of them with anthracite. A cut of 50c. a ton on anthracite became general this week on all sizes except buckwheat, which has been lowered \$1. Prices of bituminous coal and coke remain unchanged.

Western Production Drops

In the Southwest, with Kansas mines working only 25 to 30 per cent of normal time and many closing down, operators still are having difficulty disposing of their domestic grades of coal. There is a good demand for screenings, however, the supply of which is being augmented by crushed mine run. Production virtually has ceased in Arkansas. Only mines the output of which has been contracted are working. Production and market conditions in Oklahoma are similar to those in Kansas.

Colorado shows a slight falling off in production due to the continuation of warm weather. Several mines have closed down, the major portion operating on approximately 65 per cent time. On account of the warm weather there has been a demand for nut coal, which in turn has caused a surplus of lump, which moves with difficulty. There has been no change in prices and no demand for storage coal.

In Utah coal operators are discussing the 2,000,000-ton contract which the Utah Copper Co. is expected to sign with a number of Salt Lake City operators in the next week or ten days. The coal is to be delivered during the next five years at the rate of 400,000 tons a year. Slack is the heaviest end and nut the lightest. Mine run also will be used. The company is not using more coal than heretofore, but this will be the first time it has let a contract extending over such a long period of time. Outside of this contract the coal market is described as dull. Mines are working around two days a week only. There is little zest to the industrial business outside of the coal being purchased by the metal-mining and smelting industries. Slack is a little scarce and has gone up to \$1.50. The domestic trade is "spotty" on account of the changeable weather.

Price Pranks Again at Cincinnati

Cincinnati got a surprise when the April circular of the smokeless operators showed the general contract price on lump and egg reduced to \$2.75. An effort is being made to get \$3 for "spot," however. Nut is priced at \$2.25, run of mine at \$2, and slack, the firmest of the list, is still held at \$1.50. The movement of prepared sizes has been gradually dropping, which is taken to bode no good for run of mine.

Bituminous stagnation has been driven to the doors of the mines, urgent calls for action having come in the past ten

days from the smaller producers who, blocked by the railroads' action against "no bills," find coal on their mine tracks that they cannot move. As a result there is a wide variety of prices. Block and 4-in. lump are quoted at \$1.75@\$2.25 and are slow to move even where the low figure is quoted on prime coal. The spread on egg is a full 30c. Mine run is mushy and spotty, ranging \$1.15@\$1.40. Screenings are the best spot on the market at 90c.@\$1.15 with the high favored.

Retail business is only about 75 per cent of the volume at this time last year. This is directly traceable to the \$1 a ton drop in the better grades March 1, and the householder usually patterns the present by the immediate past instead of by the experience of a number of years. April prices are: Pocahontas lump, \$7.50; run of mine, \$5.50; bituminous lump, \$6; slack, \$4@\$4.50. River business is still booming with more arrivals and departures of coal tows than have been recorded in several seasons. The water stage is ideal for a heavy movement.

Columbus Trade Stagnant

The Columbus trade shows no signs of improvement. Domestic trade is about over for the time being and dealers are keeping stocks at a low level. A short cold spell last week aided in cleaning up. Buying for summer stocking has not started. Retail prices are still weak and irregular.

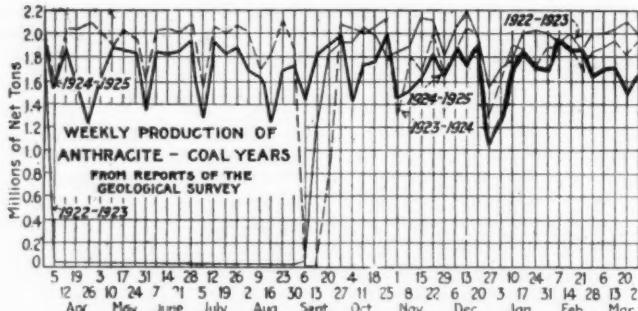
Steam trade is limited to present requirements, large users having adequate reserves and in some instances much larger than normal. Utilities and railroads are about the only large customers. Prices are variable, with a considerable number of distress cargoes available tending to disturb quotations. Contracting is slow, and most users are content to buy on the open market in preference to entering into agreements at this time. A good many inquiries are out, but only a few of the larger contracts have been renewed. Quotations on contract coal are about 25 to 35c. less than a year ago for the same grades.

Quite a few inquiries have been received from lake shippers. Prices offered for lump from West Virginia and Kentucky average about \$1.75 in comparison with \$2 last season. Only a few lake agreements have been closed as shippers are playing a waiting game. The change in the duty on slack shipped to Canadian points is disturbing the lake trade to a certain extent. Loading of bottoms by certain companies is going on, but the movement to the upper lake ports will not start until late in April.

Production in the southern Ohio field ranges from 13 to 17 per cent of normal. Certain state contracts have been placed and this will stimulate Ohio production to a limited degree.

Depression in eastern Ohio mining operations and in markets served by the district is more pronounced than in many years. Many additional mines have closed and those operating will be compelled to curtail output as many expiring contracts have not been renewed and, further, because current demand is at an exceedingly low ebb. There is a scarcity of slack and nut-and-slack, due to restricted lump production, and prices thereon have stiffened, \$1.40@\$1.45 being quoted on slack and \$1.45@\$1.50 on nut-and-slack.

Practically no inquiries are being received, and such needs as may exist are discovered and solicited long before they develop into inquiries. The retail business is practically over and little if any demand is coming from the retail yards. Little pre-season shipping of Lake cargo coal is being done by Ohio mines because of the uncertainty as to freight rates from the mines to the docks, due to the case now pending before the Interstate Commerce Commission and the possibility of a reduction in these rates.



Running Time Low at Pittsburgh

No precise estimate is obtainable as to the rate at which the Pittsburgh district is operating since the new coal year opened. Operations decreased last week, however, as they had done the week before. Many believe that operations next week will be at under 25 per cent for the district.

There has been practically no market demand for Pittsburgh coal except slack, which has been going up right along, with shipments of lump decreasing toward insignificant proportions. A few days ago \$1.50 was paid for steam slack and one seller at least expects soon to get \$1.75, which would be the mine-run market. Mine-run steam has had practically no market for a long time. Gas slack has not been active but is naturally quotable at about 10c. above the market made by steam slack.

The Bessemer district is likely to run in future as it has in the past, which means poorly, with practically all the Group 2 mines out but a number of Group 1 mines working. The whole district is practically non-union with the exception of a few mines around Butler.

At Buffalo some coal men report "a pretty good March," but it is not common. All coal is very dull. There is too much coal for the trade to take care of and there is not much prospect of betterment right away. Quotations remain at \$1.60@\$1.75 for Fairmont lump, \$1.40@\$1.50 for mine run and \$1.25@\$1.40 for slack; \$2.25@\$2.50 for Youghiogheny gas lump, \$2@\$2.25 for Pittsburgh and No. 8 steam lump, \$1.40@\$1.60 for slack, and \$1.75@\$2 for Allegheny Valley mine run.

New England Market Apathetic

The market for steam coal in New England continues apathetic; there is as yet no relief from the discouraging dullness of the past four weeks. Even the "non-union strike" has been without effect, and buyers profess little or no interest in current quotations. The average purchaser knows that within limits he can buy good coal at practically his own price, and aside from contract tonnage that has been placed in accustomed channels there is only hand-to-mouth buying, with little or no prospect of improvement during April.

Reports from Hampton Roads piers are in no respect different from those of previous weeks. There are small accumulations, but in volume sufficient to keep the market level much lower than the asking price of the more conservative agencies, and \$4.20@\$4.35 is still the actual market range for spot coal of No. 1 navy grade. The bulk of the tonnage now being moved—that is, aside from contract requirements—is being sent forward for inland distribution, much of it in advance of sale, and there continues the steady process of forcing cargoes on reluctant buyers. On-car prices, therefore, have sagged materially during the fortnight, and \$5.50 is today a high figure for prompt coal on cars, Boston.

All-rail shippers are struggling to move small tonnages, but the outlook is far from hopeful. Non-union operations of large capacity have been idle for months awaiting some satisfactory adjustment of local wage scales. But the territory in New England that is open to all-rail deliveries under present conditions is much restricted by the low range of Pocahontas and New River via tidewater rehandling plants, and even \$2@\$2.25 on superior coals originating in favored districts would not attract New England purchasers except in scattered instances. The trade finds the auguries anything but favorable and is settling down to a long, slow season.

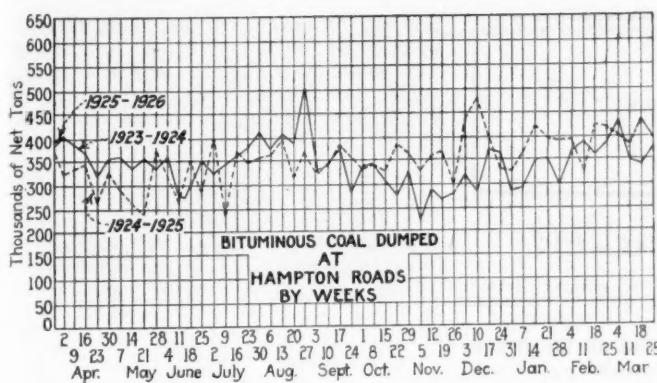
Trade at New York Quiet but Promising

Some new business has already been received by New York houses as a result of West Virginia labor troubles. Consumers of Southern coals are closely watching the situation and should the tie-up seriously interfere with production producers of Pennsylvania coals look for better business.

Industrial consumers here continue to display indifference. Contracting by commercial users is practically finished for the present, but there is some railroad and cement business that has not yet been placed.

Notwithstanding the existing dullness some sellers profess to see better times ahead, believing that by the end of this month reserve stocks will have reached such a low spot that buyers will be prepared to talk new business.

Tidewater coal is moving better than line demand. Free



coals are kept moving, but prices continue low and unprofitable to the seller, according to the latter.

Philadelphia consumers simply will not buy, it seems, except for immediate use. Hardly any of them seem to give a thought to stocking and those who have stocks are intent upon using most of them before buying any more coal. If the threatened strike in the Fairmont region had any effect on local buying, and there are some who thought they felt some reaction on account of it, this has now vanished.

Public institutions that use soft coal are now beginning to advertise for bids for their year's supply and the number of large buildings using soft coal has increased quite a little in the past few years, and as a result producers who formerly did not go after this business are now eagerly seeking it. If anything, quotations made are slightly below present market prices. Railroad buying has not increased to any appreciable extent, although some shippers are going after this trade.

At Baltimore the soft-coal business has not been materially affected so far by the strike in northern West Virginia. Prices quoted here show a slight upward trend, but it is by no means marked. The export situation is only fair, although it is much better than in January and February.

Coal buying in the open market at Birmingham has slowed down to some extent and inquiry and bookings are not as strong as they were a short time ago. Contracting is going on moderately well. Proposals on Seaboard Air Line fuel coal for the next year are being considered and the Louisville & Nashville award is expected in a few days. These two lines will take around 3,000,000 tons from the district, using mostly Big Seam washed coal. Bunker trade at Mobile and New Orleans during March was slightly off from February records, but Pensacola is reported to have had a good month and bunkered a large tonnage of Alabama coal.

Buying of spot domestic coal was very sluggish throughout March and the movement light. However, contracts have been made for a large tonnage of the better grade domestic sizes for shipment through the next six or eight months, and stocking is expected to begin this month to some extent, though dealers are not manifesting the interest that they did at this season during the past two years and are not buying as heavily.

There was no material change in steam and domestic quotations during the week. The domestic prices made effective March 14 will hold through April. There is no indication of weakening in the steam prices which have been in effect for several weeks past.

Anthracite Passes Low Point

The hard-coal market at New York is improving but slightly. Buying for next winter has not started and consumers have not yet been aroused to the possibility of trouble in the mining fields next September.

Following the lead of the producers, retail prices have been cut and the campaign for early buying is on in earnest. Retail dealers have considerable coal on hand from the old coal year which they want to dispose of before refilling their bins.

The old line companies have no difficulty in moving their output and will feel the effects of increased demand first. Independent coals are not moving rapidly enough to increase or to necessitate the reopening of mines that have been closed since February or March.

Egg coal picked up in demand last week, but the heaviest demand was for stove. Buckwheat No. 1 is in good shape

because of the limited tonnage available, but barley leads the list of small sizes with rice a close second.

At Philadelphia there is still an air of quietness about all branches of the trade. Retailers have announced new spring prices as of April 1, but the consumer is slow to respond and orders from dealers are not sufficient to keep the mines going full time. The many holidays this month will cause no regret on the part of producers. Due to lack of demand the probability is that retailers will do considerable cutting of prices.

A majority of the dealers came into April with full stocks, as most of them were induced by their shippers to fill up on a guarantee of April prices; therefore orders for current shipment are light. At this writing very little of the re-sized coal has reached here. On nut, the size most affected, some dealers are quoting "old style" and "new style."

The steam trade is ordinary, and with reduced working time at the mines there is not so much of a problem to dispose of the output. However, there is an offering of independent buckwheat at \$2 and rice at \$1.75. Barley is fairly well taken all around.

The cut in retail prices in Baltimore for the month of April has been followed by a sales drive by a majority of dealers in an effort to distribute a considerable amount of their sales over the spring and early summer months, as they feel that coal may be hard to get after midsummer due to the threatened anthracite strike on Sept. 1. The new prices show a cut of approximately 75c. a ton, although the cut on some sizes is \$1.

The anthracite trade at Buffalo is about as slow as anything else in coal; demand is extremely light and is likely to remain so all summer. While natural gas is high, its neatness is an advantage. Coke is \$4 to \$5 cheaper, while buckwheat is just as available as the consumer is ready to make it, at a reduction of \$7 a ton. There is much effort still to introduce oil as fuel, and smokeless coal is everywhere, offering to special consumers (such as the city schools) at \$8 or more reduction.

Anthracite shippers do not feel any alarm over the proposal to use Alberta lignite as a substitute for anthracite. Coke going into Canada is the real competitor of anthracite. The movement will be light during the warm months, but it will go on again next winter stronger than ever.

The really active part of the coal trade locally just now is the loading of lake cargoes. About 25 steamers have been loaded now, with total of about 200,000 tons net. The tonnage is ample and the cargoes are still without destination or rate. The rate is expected to be the same as last season.

Connellsville Coke Market Quiet

Labor troubles in the Connellsville coke region arising from the recent wage reduction have practically died out, at least so far as production is concerned. Contract shipments seem to be keeping up, as there is practically no important demand for spot coke in the open market. The Frick company of course keeps to the old scale.

Early in the week there were fears that the trouble the United Mine Workers promised for West Virginia might spread into the Connellsville region, but late in the week, when the West Virginia trouble proved less than expected, these fears died out. Prospects are for lessening coke requirements from week to week.

At the beginning of the week a few small lots of spot furnace coke sold at \$3.35, for non-metallurgical purposes, but the general asking price has been \$3.25 and it seems likely this could be shaded. Spot foundry coke is quotable at \$4@\$4.50 but is weak at that range, with light demand, and the market seems likely to work downward. As to contract furnace coke, there is no further inquiry. Presumably it could be bought at \$3.25 for the remainder of the quarter.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended March 21, 1925.....	909,363	139,363
Previous week.....	924,149	149,105
Week ended March 22, 1924.....	908,390	161,106
	Surplus Cars	
	All Cars	Coal Cars
March 22, 1925.....	320,565	168,963
March 14, 1925.....	295,939	151,828
March 22, 1924.....	213,093	115,361
	Car Shortage	
	361

Foreign Market And Export News

Inquiry Stronger in British Market; Production Higher

There has been slightly better inquiry in the South Wales market, but so little of this has materialized into actual orders that meager improvement of the trade as a whole can be recorded. Accumulations still are very heavy and buyers are taking only what they want from day to day. The French and Italian demand is unusually small, due not only to active German competition but also to the recent depreciation in exchange. The French Marine has inquired for 24,000 tons of Admiralty large for delivery during the next 3 months. Coaling depots are taking small quantities steadily, but there is very little business with South America or Spain. Prices have eased a bit and operators are offering slight concessions for immediate shipment, but firmer freight rates are operating against these factors and help to discourage buyers.

The position in the North of England goes steadily from bad to worse, and more pits have closed down. Prices have fallen again, and though best steams and gas coals are offered cheaper there are no buyers. Cardiff has obtained the Egyptian State Railways' contract for 150,000 metric tons of Monmouthshire large at approximately 34s. 4d. per ton c.i.f. Alexandria. Argentina is inquiring for 50,000 tons best admiralty smokeless.

Output by British collieries in the week ended March 21, a cable to *Coal Age* states, totaled 5,258,000 tons, according to official reports. This compares with a production of 5,251,000 tons in the preceding week.

Trade at Hampton Roads Weak In All Lines

Business at Hampton Roads last week showed little improvement, with stocks at tidewater reduced to a low level and inquiries at a minimum. Contracts were not materializing, and some foreign business moving on old

contracts constituted one of the heaviest movements of the week.

Dumpings for March ranged about 1,600,000 tons, but the prospect for business during April was not so bright. No effect was felt here from the reported strike of miners in some parts of West Virginia, though shippers were hopeful that some stimulation to prices would take place.

French Market Affected Little By Severe Weather

Cold, snow and sleet coming rather late in the season in France have wakened interest in household fuels, but producers have not been much affected by the change, as consumers have ordered only for immediate requirements.

French and Belgian producers of sized home fuels recently met in order to agree on summer prices. The Belgians, having heavy stocks on hand, for which they have no great outlet, favor easy summer prices, but the French being much better situated and desiring stability in prices, favor moderate changes.

In consequence of a fall in French currency in relation to the Belgian franc, exports to Belgium have increased, but, conversely, imports from Great Britain, especially Welsh anthracite, have materially declined since the beginning of March.

The Germans, who tried the scheme of heavily laden barges, had to dispose of their shipments at unheard of rates.

The Office des Houillères Sinistrées issued a new schedule March 1. Prices for coal on steamer have not been modified; those on truck, Jeumont-Givet, are unchanged save for unscreened steam that have risen by 1.50 to 2.50 fr. per ton to 80@85 fr. The prices on truck, French frontier, or French ports on the Rhine, are increased for unscreened to 83@88 fr.; for washed peas for forging to 120@125 fr.; for washed three-

quarter bituminous or one-half bituminous peats for steam 110@115 fr.; for dry peats to 107@115 fr.; for house coals to 160@185 fr. according to grade, and for lignite briquets to 85@90 fr.

U. S. Fuel Imports in February

	(In Gross Tons)	1924	1925
Anthracite.....	25,410	12,252	
Bituminous.....	46,362	36,436	
From			
United Kingdom.....	4,095	500	
Canada.....	42,267	28,295	
Japan.....		7,600	
Australia.....	46.....		
Other countries.....			41

Export Clearances, Week Ended

April 4, 1925

FROM HAMPTON ROADS

	Tons
For Nova Scotia:	
Amer. Schr. Jean, for Yarmouth.....	1,307
For Cuba:	
Nor. Str. Lisbeth, for Havana.....	2,443
Nor. Str. Annavone, for Havana.....	5,176
Dan. Str. Fredensborg, for Cienfuegos.....	2,931
Amer. Str. Levisa, for Preston and Banes.....	2,391
Dan. Str. Fano, for Havana.....	2,865
For British West Indies:	
Nor. Str. Dicto, for Port of Spain.....	4,913
Nor. Str. Gefin, for Port Castries.....	3,500
Nor. Str. Sveland I, for Port of Spain.....	2,388
For Dominican Republic:	
Amer. Schr. Charles A. Dean, for Sanchez.....	1,497
For French West Indies:	
Amer. Schr. Harry G. Deering, for Fort de France.....	2,076
Swed. Str. Befrost, for Fort de France.....	2,541
For Italy:	
Ital. Str. Sile, for Porto Ferrajo.....	9,540
Span. Str. Aritz Mendi, for Savona.....	6,958
Ital. Str. Hermada, for Genoa.....	6,482
For New Brunswick:	
Dan. Str. Paris, for St. John.....	4,736
For Brazil:	
Br. Str. Tritonia, for Rio de Janeiro.....	6,216

FROM BALTIMORE

For Italy:	
Ital. Str. Campania for Genoa.....	6,650

Hampton Roads Pier Situation

N. & W. Piers, Lamberts Pt.:	March 26	April 2
Cars on hand.....	1,033	776
Tons on hand.....	67,577	48,882
Tons dumped for week.....	131,598	140,546
Tonnage waiting.....	10,000	5,000
Virginian Piers, Sewalls Pt.:		
Cars on hand.....	1,306	951
Tons on hand.....	91,260	67,600
Tons dumped for week.....	100,590	103,818
Tonnage waiting.....	8,450	6,538
C. & O. Piers, Newport News:		
Cars on hand.....	2,064	2,252
Tons on hand.....	115,240	111,215
Tons dumped for week.....	124,675	118,983
Tonnage waiting.....	2,535	12,950

Pier and Bunker Prices, Gross Tons

	March 28	April 4†
Pool 9, New York...	\$4.70@ \$4.95	\$4.70@ \$4.85
Pool 10, New York...	4.45@ 4.65	4.50@ 4.65
Pool 11, New York...	4.25@ 4.50	4.25@ 4.50
Pool 9, Philadelphia...	4.65@ 4.90	4.65@ 4.90
Pool 10, Philadelphia...	4.30@ 4.55	4.30@ 4.55
Pool 11, Philadelphia...	4.25@ 4.30	4.25@ 4.30
Pool 1, Hamp. Roads	4.00	4.15
Pool 2, Hamp. Roads	3.85	4.00
Pools 5-6-7, Hamp. Rds.	3.90	3.90

BUNKERS

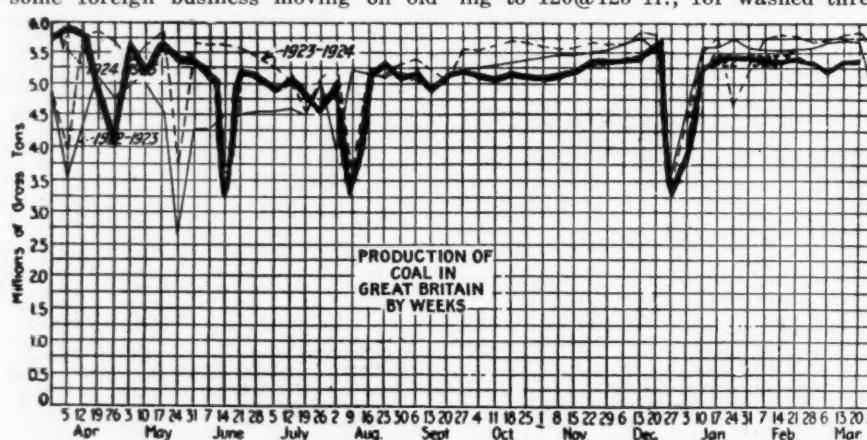
Pool 9, New York...	\$4.95@ \$5.20	\$4.95@ \$5.10
Pool 10, New York...	4.70@ 4.90	4.75@ 4.90
Pool 11, New York...	4.50@ 4.75	4.50@ 4.75
Pool 9, Philadelphia...	4.80@ 5.10	4.80@ 5.10
Pool 10, Philadelphia...	4.60@ 4.75	4.60@ 4.75
Pool 11, Philadelphia...	4.45@ 4.65	4.45@ 4.65
Pool 1, Hamp. Roads	4.10	4.25
Pool 2, Hamp. Roads	4.00	4.10
Pools 5-6-7, Hamp. Rds.	4.00	4.00

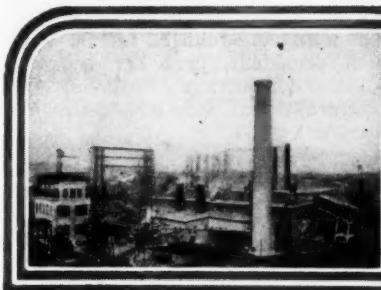
Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

Cardiff:	March 28	April 4†
Admiralty, large.....	27s.	26s. @ 27s.
Steam smalls.....	15s.6d. @ 16s.	16s.6d.
Newcastle:		
Best steams.....	17s.3d.	16s.9d. @ 17s.
Best gas.....	20s.	17s.9d.
Best bunkers.....	18s. @ 18s.6d.	18s. @ 18s.6d.

† Advances over previous week shown in heavy type; declines in italics.





News Items From Field and Trade



ALABAMA

At the annual meeting of stockholders of the DeBardeleben Coal Corporation held at Birmingham, March 24, all the old officials, headed by Henry T. DeBardeleben, president, were re-elected. Out-of-town directors named were W. F. Hull, New York; J. B. Townsend, T. J. Ward and Henry P. Yanks, Philadelphia. The new tipple at the corporation's Empire mine has been placed in use and the washery is expected to be ready for operation by April 15. These improvements, which have been under way for several months, will cost about \$150,000.

Much interest is shown at Birmingham in negotiations under way by the Pratt Fuel Corporation to acquire the valuable coal holdings of the Bankhead Coal Co. and Stith Coal Co., located in Walker County, and on which are located the Bankhead and Bon Air mines of the respective companies. About 2,000 acres of land is involved in the deal, which carries the Mary Lee seam principally, which is now being extensively mined at the above operations, and also several other seams which have not been developed. While negotiations are officially admitted no details are available at present. The Pratt corporation's holdings have been steadily increased in the past two years by purchase of independent properties in the Walker County field and it now is one of the largest producers of commercial and domestic coal in the district. Walker Moore is president of the corporation, in which a number of Eastern capitalists also are interested.

COLORADO

Herbert Addison has been appointed receiver for the International Fuel Corporation.

Colorado coal output in February decreased 56,653 tons compared with the same month a year ago while on the other hand Colorado production increased 67,333 from Jan. 1, 1925, to Feb. 28, 1925, compared with the same period a year ago Routt County's tonnage for February increased 74,000 over the same month a year ago. The total number of men working in the mines during February this year was 13,185.

The State Industrial Commission held meetings in Trinidad April 7, in Walsenburg on the 8th and Canon City on the 9th to hear the protest raised by some of the miners who would reject the reduction in the wage scale that was posted and submitted to the Industrial Commission to take effect if confirmed by the commission April 15. The

consensus is that the mines will go ahead on the scale as proposed without any difficulties.

ILLINOIS

A suit for damages which has been pending in the Madison County Circuit Court for four years was settled on March 24 when Donk Bros. Coal & Coke Co., of St. Louis, Mo., agreed to pay the Madison Coal Corporation, also of St. Louis, \$3,000 for coal taken from the land on which the Madison Coal Corporation claimed exclusive coal rights. The Madison company has a large mine at Glen Carbon while Donk Bros. have a mine at Maryville. According to depositions taken in the case the Donk Bros. miners encroached on the Madison Coal Corporation's property, taking out approximately 5,000 tons of coal. The settlement represents a compromise agreement.

The Brewerton Coal Co. has acquired three idle coal mines in Perry County and will commence operations as quickly as legal matters in relation to receiverships involving the mines can be adjusted. The mines are at Ward, Tamaroa and Cutler. The Brewerton company, which has headquarters at Lincoln, now operates three other mines. The three mines to be taken over have been idle since Jan. 30, 1924.

The Peabody Coal Co.'s Mine No. 6, located seven miles north of Springfield, broke its production record March 18 when in eight hours 775 miners brought to the surface 4,014 tons of coal, which filled eighty-six railroad cars. The previous record was 3,717 tons, made last spring. In the record output a total of 1,569 pit cars were used. The mine had a payroll of approximately one million dollars last year. P. W. MacMurdo is superintendent of the mine; and Oney Melkush, mine manager.

Early in March McFadyen and Fenno began the work of developing a new mine four and one-half miles west of Geneseo.

Certificates as mine managers will be issued to John M. Reid, John M. Reid, Jr., and Charles Petacek, all of Edwardsville, while Henry Blase, of Edwardsville, will be certified as a mine examiner. The four men took the vocational course at the Edwardsville high school, where they received instruction under Henry Knamiller of the Industrial Vocational Educational Bureau.

The Continental Zinc Co., of LaSalle, has transferred to the Mattheissen & Hegeler Co., also of LaSalle, coal rights and extensive realty and industrial holdings for approximately \$2,500,000.

The name of the latter company has been changed to the Continental Zinc Co., while a subsidiary corporation, known as the Mid-Continental Co., is to be known hereafter as the Mattheissen-Hegeler Co.

INDIANA

Compensation claims aggregating \$200,000, thought to be the largest amount ever asked from a single industry tragedy since the Indiana compensation law went into effect, are being heard at Sullivan, growing out of the mine disaster of Feb. 20.

T. A. Thompson, accountant for the Rockville Coal Mining Co., operating the "Little Booby" south of Rockville, has made out his last check and closed the offices of the company. A short time ago it was announced that work would cease and the miners were released. This was followed by a leasing of the mine to former employees, who intended to continue operations at the start on a small scale, and if they could make it pay a fair return, attempt to increase the number of employees. However, the miners' union, it is said, blocked this arrangement by refusing to allow any of its members to go into the shaft unless all were ordered to work, with the result that all are now out.

KENTUCKY

The West Kentucky Coal Bureau, traffic organization of the western Kentucky operators, has arranged its next meeting for the Seelbach Hotel, Louisville, April 14.

The Southern Gateway Coal Co., Louisville, operating at 906 Starks Building, has been formed by Elmore Manning, president, and Guy H. Sowards, secretary-treasurer, to job both Eastern and Western Kentucky coals. Mr. Manning has sold his interest in and resigned from the Downard-Manning Coal Co., also jobbers, and Mr. Sowards resigned from the Southeastern Fuel Co., Louisville sales agents, he having been resident manager for that concern.

The Elkhorn Collieries Co., at Bastin, has started rebuilding its burned tipple and power plant destroyed in early March by fire starting in the boiler room.

The Himyar Coal Co., at Domino, Ky., three miles north of Hazard, Ky., is now installing solid concrete bulkheads in the mine to replace clay and wood heads, in an effort to keep out all air and stop a fire which has been in progress for nine months, starting from an explosion last summer. It is asserted that there is no blaze, merely live coals, and it is believed that it can

eventually be stopped. This is the only mine known of in the Kentucky fields where there has been any long burning fires, such as have destroyed thousands of acres of coal land in some of the Central States. It is reported that part of the mine is being operated in spite of the blaze in other workings.

The Darby Fork Coal Co., at Darby Fork, Lotts Creek, is electrifying its plant and will install shaker screens and other modern equipment.

MARYLAND

Hugh C. Hill, who has been president of the firm of Yeaton & Co., retail coal merchants, of Baltimore, for the past fifteen years, has resigned from that firm to become president of the A. F. Lawrence Coal Co. Mr. Hill takes over the active management of this large company and will have his headquarters at 121 W. Saratoga Street, Baltimore. Mr. Hill, who is widely known in the trade, is president of the Baltimore Coal Exchange.

OHIO

The mine of the Hocking Valley Products Co., at Greendale, which was the scene of a fire several weeks ago, has been reopened for work, following the work of the Ohio Mining Department in extinguishing the flames. The mine caught fire from a short-circuit but only a small amount of damage was done. None of the equipment was damaged to any extent.

W. D. McKinney, who represents a number of operators in the southern Ohio field, is busy preparing for the hearing before the I. C. C. on the late rate case, which has been pending for some time. The examiners named by the commission some time ago made a report recommending that rates from the various fields supplying tonnage for lake shipment be changed radically. This is now being attacked by operators in the southern fields of West Virginia and Kentucky and a rehearing has been set for April 27. Operators in the southern Ohio field feel that the changes were not sufficient and will argue for the examiners' rates if a still wider differential cannot be obtained.

The Lincoln Mine of the Lorain Coal & Dock Co., at Bridgeport, which sustained a heavy loss several months ago by a fire, is still sealed by Chief Inspector James Watson of the Ohio Mining Department, but it is believed that the fire has burned itself out. It is thought that the mine can be opened whenever the company desires to operate.

PENNSYLVANIA

At the bi-monthly meeting of the mining section of the Engineers Society of Western Pennsylvania, to be held on the night of April 28 in the William Penn Hotel, Pittsburgh, N. A. Newdick, of Columbus, Ohio, will present a paper on "The Development of Mechanical Coal Loaders." This will be followed by moving pictures of the Coloder machine at work.

Judge F. P. Schoonmaker, in U. S. district court at Pittsburgh, April 1 appointed Horace F. Baker, local attorney, receiver of the W. R. Calverley Co., Inc., a coal mining concern of this

city. The appointment was made following the institution of a suit against the company by J. D. Hankinson & Co., of Utica, N. Y. In the bill of complaint the plaintiff company, which owns 50 shares of capital stock in the local concern, alleges that the Calverley company has assets of more than \$390,000 and debts of upwards of \$300,000 and that if the company is not under capable management it will be subjected to a large number of suits and the company's assets will be dissipated.

Approximately 1,500 men were thrown out of work by additional Cambria County mines closing down on April 1. Six companies posted notices of suspension, including the Maderia-Hill Coal Mining Co., near Barnesboro; Delta Coal Co., Spangler; Spangler Coal Co., Shoemaker Coal Co., at its Sonman operations, Taylor-McCoy Company at Gallitzin, and the Sterling Mine No. 6, at Bakerton. A reduction of ten employees in the office of the Pennsylvania Coal & Coke Co. at Cresson was announced and the working hours of all other employees was cut. The Shoemaker Coal Co., near Lilly, suspended operations for two weeks, affecting 300 men.

The Connellsville Manufacturing & Mine Supply Co. has just installed a new coke conveyor and screen for taking the coke from the ovens to the railroad cars at the plant of the Snowdon Coke Co., near Brownsville.

The American Manganese Mfg. Co. Dunbar, has been reorganized as the Dunbar Corporation, with R. M. Marshall as vice-president and general manager. The company expects to resume operations in a few months.

John Yourishun, district secretary-treasurer of the United Mine Workers of District 7, has announced that he is preparing to call a meeting of the tri-district boards to arrange preliminary plans for the tri-district convention at which demands will be drawn up for the new contract with the operators. The present contract expires August 31. The convention will be held, most likely, in Hazleton. Thomas Kennedy, international secretary-treasurer of the

union, will again be chairman of the scale committee. John L. Lewis, international president, probably will preside at the convention. Philip J. Murray, international vice-president, also will attend.

A report of the Lehigh & Wilkes-Barre Coal Co. for the year ended Dec. 31, 1924, shows net income of \$7,181,608, after taxes and interest. After allowing for dividends on preferred stock, which was created in March, 1924, balance is equal to \$20.06 a share (par \$50) earned on \$16,917,500 outstanding common stock. Income account for 1924 follows: Gross, \$33,240,922; operating expenses, \$21,444,549; taxes, \$4,392,363; interest, \$222,402; net income, \$7,181,608; dividends, \$5,275,967; surplus, \$1,905,641.

A bill increasing the salary of the Secretary of Mines from \$6,000 a year to \$8,000 has been introduced in the Senate by Senator Joyce, Luzerne County. It was referred to the appropriations committee, which reported that it would make an affirmative recommendation.

Representative Joseph B. McDermott, Cambria County, has introduced a bill in the House transferring and reappropriating \$13,000 of the \$59,800 appropriated in 1923, to the Department of Mines for the payment of inspectors of the coal mines and their expenses.

Hadesty & Collins, mining contractors, of Pottsville, have started work on sinking a four-compartment shaft at the Drinkwater Colliery of the Buck Run Coal Co., on the outskirts of St. Clair. The shaft will be sunk to a depth of between 800 and 1,200 ft., the actual distance depending on the thickness of the coal vein that is encountered.

Field surveys were started recently for the opening of a new anthracite colliery to be controlled by the Blair-Allen Coal Co. near Tomhicken, three miles out of Hazleton. Scranton and Freeland men are interested in the venture. The existence of anthracite in this section was discovered only a few months ago, it having previously



Village of Summerlee, Fayette County, West Virginia

In the highlands of Fayette County there is some gently rolling country quite different from what we associate with central West Virginia with its majestic hills. This mine of the New River Co., mining the Sewell seam by a shaft, is located on the Chesapeake & Ohio Ry. and on the White Oak Branch of the Virginia Ry.

been supposed there was no coal under the plots. Much of the coal company's operations will be of a stripping nature.

A bill has been introduced by Representative James T. Heffran, Washington County, amending an act of 1911 relative to gaseous mines. The part of the act amended by the bill relates to Rule 25, and the proposed change reads: "Provided, however, that this rule shall not prohibit the air-spacing method of blasting in non-gaseous mines or in non-gaseous portions of mines. The air-spacing method of blasting may be used only with permissible explosives and only when combustible material is solidly tamped in the outer end of the hole to a length at least equal to the length of the air space.

The Hazle Brook Coal Co., of Hazleton, has found that its Lykens Valley vein is pinching out at its Midvalley operations near Mount Carmel. First the vein became very dirty and now it has practically vanished, making it necessary for the company to lay off fifty men. The vein was one of the main arteries of supply for the Midvalley Nos. 1 and 2 collieries.

Representative Patrick McDermott, Cambria County, has offered in the House an amendment to the act of 1923, relating to the appointment of board of examiners of mine foremen. The law now provides that on petition of the mine inspector of any district the court of common pleas in any county in the district shall appoint an examining board of three persons. The proposed change provides that the Secretary of Mines shall during the month of June, 1925, and every two years thereafter appoint for each inspection district an examining board of three.

The purchase from the Mill Creek Coal Co. of the Moreau, New Boston and Wolf Creek mines, in the Schuylkill field, by the Madeira-Hill Co. was announced recently. The purchase includes over 3,000 houses and several stores and commercial enterprises of the former owners. The collieries just purchased have been under the management of the new owners for the past three years.

On April 1 the companies in the Connellsburg coke region which had not previously reduced wages, except the H. C. Frick Coke Co., reverted to the 1917 wage scale.

UTAH

Mine rescue car No. 9 of the U. S. Bureau of Mines left Carbon County on March 20 for Salt Lake City for the purpose of giving a course of instruction to the students of the University of Utah School of Mines. It was in charge of Engineer F. P. Gaethke. Every coal camp in Carbon County will soon have a certified rescue team.

The grand jury indictment charging George A. Storrs and others of the Great Western Coal Mines Co. with using the mails to defraud in stock selling, has been quashed. Judge Tillman D. Johnson held that because an official stenographer who had been sworn in as a deputy U. S. Attorney was present and took the testimony at the grand jury hearing for the U. S.



Concrete Headframe at Brier Hill

This headframe is located at the Brier Hill Coke Co.'s mine at Brier Hill, Pa. Since becoming a subsidiary of the Youngstown Sheet & Tube Co., the Brier Hill company has completely electrified this mine. C. M. Lingle, present general manager of the Youngstown company's coal mines, was in charge at Brier Hill a number of years ago when the headframe was concreted.

District Attorney, the defendants were not granted their full legal protection as to the presentation of evidence before the grand jury and therefore the judge sustained the Storrs plea for abatement of the indictment. This technicality may be overcome by the U. S. District Attorney and a new indictment obtained from another grand jury. The Great Western Coal Mines Co. owns coal land in the Gordon Creek region of Carbon County. It was once announced that Jack Dempsey, heavyweight pugilist, had bought heavily into the company. This the champion soon denied.

It looks as if a new contract for the inspection of Utah's coal mines is to be made between the U. S. Bureau of Mines and the Utah Industrial Commission. Under the proposed contract to be in force hereafter the state would furnish offices for the bureau, one stenographer, rent, heat, light and incidental office expenses, in return for copies of reports made by bureau inspectors on federal leases. It is announced that approximately 40 per cent of coal mined in Utah is from mines located wholly or in part on the public domain, over which the bureau exercises jurisdiction. Heretofore the federal inspectors have been employed as state inspectors as well. Under the new agreement they will have no authority to inspect the mines under the jurisdiction of the state.

Three hundred thousand dollars is to be expended in the development of the Gordon Creek coal properties in Carbon County by the Sweet Coal Co., according to C. N. Sweet and W. J. Sweet, organizers of the company. The name of the organization has been changed

from the Gordon Creek Coal Co. to the Sweet Coal Co. Construction work and the installation of machinery and equipment will be started just as soon as weather conditions permit. The company is to operate chiefly in Carbon County. The Sweets have opened up a number of the coal mines in the state, having been connected with the Independent Coal Co., Consolidated Coal Co., Standard Coal Co., Peerless Coal Co. and the Superior Dredging Co. The properties will be equipped to ship 1,500 tons of coal per day. The National Coal R.R. is now being built for transportation of fuel from the districts.

The Great Western Coal Mines Co., Salt Lake City, in the limelight of late by reason of the indictment of its promoters by a federal grand jury and the subsequent quashing of the case by the court on a technical point, was granted permission on March 20 by the State Securities Commission to offer for sale 60,000 shares of preferred stock at \$10 a share with a bonus of 10 shares of common stock for each sale of preferred stock. The assets of the company were listed at \$3,872,820.83. Heber C. Jex, a prominent local outdoor advertising man and at one time Register of the U. S. Land Office for Utah, has been appointed president and general manager of the company.

VIRGINIA

The City of Norfolk has received bids from 16 local dealers for 24,000 tons of run of mine Pocahontas or New River coal to be delivered through the year. The Southgate Coal Co. was low bidder at \$1.84, with sixteen local bids of \$2 and two bids of \$1.90.

WEST VIRGINIA

Under existing law in West Virginia, the payment of miners in the mining of coal may be based either on measure or on weight, at the option of the employer, although most of the operators pay by weight. Bills have been introduced in the West Virginia Legislature, however, by Senator Hardman of Randolph and Delegate Hundley of Kanawha making it mandatory to pay for the mining of coal by weight.

The Meadow River Smokeless Coal Co., with offices in the First Huntington National Bank Building, Huntington, and operations at Meadow River, Greenbrier County, has filed a voluntary petition in bankruptcy. Liabilities are given as \$74,400 and assets \$68,000. Coincident with the filing of this bankruptcy petition, Edward B. Butts, attorney and coal operator, filed a voluntary personal petition in bankruptcy, placing his liabilities at \$99,526.84, and assets \$13,400.

The Evans mine near Frederick, once the property of the defunct International Fuel Co., has been abandoned. A referee in bankruptcy who is in control of the company's affairs has ordered the heavy and reclaimable machinery and equipment out of the mine to be sold at once. The company collapsed with the failure of Italian-American Bank of Denver, which had been mulcted by its officers in an effort to

keep the coal company afloat. Prospero Frazzini, head of the bank and the company, is now in the penitentiary. The mine employees will get a small fraction of the November and December payrolls due them. The mine has been down since Jan. 4. The International Fuel Co. has a mine at Mt. Harris, in Routt County, that is now counted on to pull the company out of its financial hole.

The Island Creek Coal Co. for 1924 reports net income from coal operations of \$3,835,978, against \$3,938,328 in 1923. After general expenses and all deductions for interest, depreciation and taxes the net profit for the year was \$2,426,570, against \$2,722,546 in 1923. The net profit, after allowing for preferred dividends, was equal to \$17.91 a share on the 118,861 shares of capital stock of \$1 a share par value outstanding. In 1923 the company reported net income of \$20.39 a share on the same amount of stock. The balance sheet at the end of 1924 showed net current assets valued at \$6,439,773 and net current liabilities of \$1,333,476, leaving net working capital of \$5,106,297. The net current assets included \$862,665 in the form of cash, and government securities valued at \$3,500,314.

Buyers representing upward of thirty industrial operations of the Winding Gulf and Loup Creek districts gathered in Beckley late in March and organized for a monthly discussion of merchandising problems, electing C. L. Pauley, of the E. E. White Coal Co., Glen White, president, and Walter Muir, of the Raleigh Coal & Coke Co., Raleigh, as secretary-treasurer.

Negotiations are said to be virtually complete for the purchase by the Gauley Mountain Coal Co. the mineral rights of about 5,000 acres adjacent to the Gen Rogers operations of the Raleigh-Wyoming Coal Co. The tract acquired is underlaid by the Beckley seam of coal, which is 5 to 7 ft. thick. The deal involves approximately \$250,000, it is stated. All questions involved in the deal have been settled and the deeds alone remain to be drawn. The property was purchased from J. Q. Hutchinson, B. E. Tolbert, E. H. Crouch, J. H. Dunn, Betsey Turner, of Beckley, and C. Mankin, of Canada. The company purchasing the property proposes to develop it, according to reliable reports, by sinking a shaft 740 ft. deep. About five miles of railroad will be built down Coal River from Surveyor.

CANADA

The tariff changes which were put through the federal House early in March are causing considerable discussion among Western operators. While it was generally felt that an increase in the duty on imported slack would assist Alberta mines to supply the Manitoba and Ontario markets, the 99 per cent drawback in cases where the slack is to be used for the manufacture of coke appears likely to hurt the domestic mines. The coke industry, which uses imported slack, is proving a serious competitor to Western coal in the

Winnipeg market, and with the duty now almost obliterated, the competition is likely to be keener than formerly.

Commissioner David Campbell, who recently concluded an exhaustive inquiry into allegations that a combine composed of Winnipeg dealers and Alberta operators controlled prices and selling methods of Alberta coal on the prairies, has reported that there is no such combine. Charges made by A. B. Hudson, of Winnipeg, that a combine had refused to supply him with Alberta coal to sell at his own price, turned out to be without foundation. The Commissioner has ruled that the prices fixed by the Western Canada Fuel Association are fair and that their methods are reasonable.

The annual financial statement of the Hillcrest Collieries, Ltd., for 1924 shows a deficit due to the closing down of the company's mines for nearly seven months, on account of the strike. Operating profits last year were \$4,797, as compared with \$117,958 in 1923. The payment of interest, dividends, etc., left a deficit of \$68,658, as compared with a surplus of \$15,013 for 1923. The balance to the credit of profit and loss was reduced from \$284,188 to \$215,530.

The labor situation among the miners of the Crows Nest Pass district still remains acute and many deputations to the government have been made in efforts to obtain relief. These miners were on strike during seven months of last year and have worked only at brief intervals since the settlement last Oct. 11. Lack of orders is given as the reason for the idleness. Domestic mines in the province have had a busy winter but the output is slackening now. It is expected to pick up, however, with the start of Eastern shipments in May.

Traffic

I. C. C. Calls Conference on Westbound Rates

In an effort to reach an agreement among conflicting interests on a revision of coal rates westbound from points in Illinois, Indiana and western Kentucky, the Interstate Commerce Commission has invited all parties concerned to meet with it in Washington for a conference on April 10. The case immediately at issue is known as Investigation and Suspension Docket No. 2346, but a number of parallel cases will be considered at the open and informal conference called by the commission.

This scheme of the commission to handle the issue by summoning representatives of the various interests to meet around the conference table to discuss the problem is hailed as a constructive effort to avoid long delay and to reduce the expense of litigation.

The case arises from an effort of practically all carriers in the territories affected to put into effect new tariffs on westbound coal which would effect, directly or indirectly, practically all shipping points in Illinois and Indiana and in the western part of Kentucky. The new tariffs were promulgated by

the railroads in order to make adjustments in accordance with recent rulings of the Interstate Commerce Commission. In some cases increases in rates would result while in others there would be decreases. The tariffs were scheduled to become effective Feb. 19, last, but owing to protests by shippers and consumers they were suspended by the commission pending investigation, the conference being the first public step in this procedure.

C. & O. to Refund Half Billion In Rate Controversy

An order of the Interstate Commerce commission in the case of the Nelson Fuel Co. et al. against the Chesapeake & Ohio Ry. et al., of Feb. 9, granting New River district rates to shippers on the Greenbrier & Eastern R.R., will be published by the Chesapeake & Ohio, as required by the commission, to become effective April 20, 1925. Reparations also were allowed to shippers amounting to over one half million dollars with interest. Approximately one-half of the reparations are for freight paid two years prior to the appeal March 1, 1924, by the Chesapeake & Ohio to the whole commission, although two years and six months had elapsed since the institution of the suit by the Nelson Fuel Co. and other shippers.

This ends a determined fight of many years led by the Nelson Fuel Co. against apparently insurmountable obstacles to get the same freight rates for shippers of coal in Greenbrier County as is accorded all other shippers of coal in the smokeless coal field, and will make it possible for them to compete with the other fields. It also will mean the immediate development of the Big and Little Clear Creek territories.

The New York Public Service Commission has approved a new rate on the New York Central (East) on coke, coke breeze and coke dust, in carloads (minimum weight in open cars 50,000 lb. except that when car is loaded to full visible or cubical capacity actual weight will apply, but not less than 35,000 lb., and in box or stock cars 40,000 lb.), from Geneva to Irondequoit and Rochester, State St., \$1.13; a reduction of 26c. per net ton; effective April 11, 1925, under order of the commission dated Feb 25, 1925.

Obituary

Warren Madison Puckett, president of the Cabin Creek Consolidated Coal Co., and widely known among coal operators in West Virginia, died suddenly on Sunday, March 29, at his home in Charleston, W. Va. Mr. Puckett was born at Newport, Giles County, Virginia, on July 6, 1869. He was for a time cashier of the First National Bank of Hinton, but later moved to Charleston to engage in the drug business. Afterward he became interested in coal properties on Cabin Creek and with the organization of the Cabin Creek Consolidated Company he became its first vice-president. About ten years ago he succeeded M. T. Davis as president of the concern and under his direction the business of the company assumed large proportions. He is survived by his wife and one daughter. Funeral services were held on Tuesday, March 31.

Industrial Notes

The southern Illinois cyclone of March 18 wrecked the town of Murphysboro, Ill., but spared the plant of the **Egyptian Iron Works** located there. The factory was damaged only slightly and is now in full production.

The **Trico Fuse Mfg. Co.**, of Milwaukee, announces the addition to its engineering staff of William T. Clark. Mr. Clark's experience includes activity in this country, England and Continental Europe.

Lyle Marshall, former manager of the service department of the **Industrial Works**, Bay City, Mich., and later connected with the Chicago office of that company, recently was appointed district sales manager with offices at 619 Dixie Terminal Building, Cincinnati, Ohio. **James E. Shearer**, assistant sales manager, has moved his headquarters from the home office to the New York office, 50 Church Street. **George T. Sinks**, in charge of the New York district, will remain in that position.

Coming Meetings

American Welding Society. Annual meeting, Engineering Societies Building, 29 West 39th St., New York City, April 22-24. Secretary, Miss M. M. Kelly, 33 West 39th St., New York City.

National Retail Coal Merchants Association. Annual convention, Traymore Hotel, Atlantic City, N. J., May 11-14. Resident vice president, Joseph E. O'Toole, Transportation Bldg., Washington, D. C.

The American Society of Mechanical Engineers. Spring meeting, May 18-21, Milwaukee, Wis. Secretary, C. W. Rice, 29 West 39th St., New York City.

Mine Inspectors' Institute of America. Annual convention, Jefferson Hotel, Peoria, Ill., May 19 and 20. Secretary, G. B. Butterfield, 179 Allyn St., Hartford, Conn.

Chamber of Commerce of U. S. A. Thirteenth annual meeting, May 20-22, Washington, D. C.

Manufacturers' Division of the American Mining Congress. National exposition of coal-mining equipment, Cincinnati, Ohio, week of May 25. Secretary of American Mining Congress, J. F. Calbreath, Munsey Building, Washington, D. C.

National Association of Purchasing Agents. Tenth annual convention, Milwaukee, Wis., May 25-28. Secretary, W. L. Chandler, Woolworth Building, New York City.

American Wholesale Coal Association. Ninth annual convention, French Lick Springs Hotel, French Lick, Ind., June 1 and 2. Secretary, G. H. Merryweather, 1121 Chicago Temple Bldg., Chicago, Ill.

Illinois & Wisconsin Retail Coal Dealers' Association. Annual meeting, June 9-11, at Lake Delavan, Wis. Secretary, I. L. Runyan, Great Northern Bldg., Chicago, Ill.

Mid-West Retail Coal Association. Annual meeting at Kansas City the first half of June. The exact date will be decided upon soon.

National Coal Association. Annual meeting, June 17-19, Edgewater Beach Hotel, Chicago, Ill. Executive Secretary, Harry L. Gandy, Washington, D. C.

International Chamber of Commerce. Third general conference, Brussels, Belgium, June 21-26.

American Society for Testing Materials. Twenty-eighth annual meeting, week of June 22, Chalfonte-Haddon Hall, Atlantic City, N. J. Secretary-treasurer, C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

American Institute of Electrical Engineers. Annual convention, Saratoga Springs, N. Y., June 22-26. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

Chemical Equipment Exposition. June 22-27, Providence, R. I. Association of Chemical Equipment Manufacturers, 1328 Broadway, New York City.

Twelfth National Foreign Trade Convention. Seattle Wash., June 24-26. Chairman, James A. Farrell, National Foreign Trade Council, Hanover Square, New York City.

Tenth Exposition of Chemical Industries. Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

New Equipment

Lighter Parts Make Cap Lamp Less Burdensome

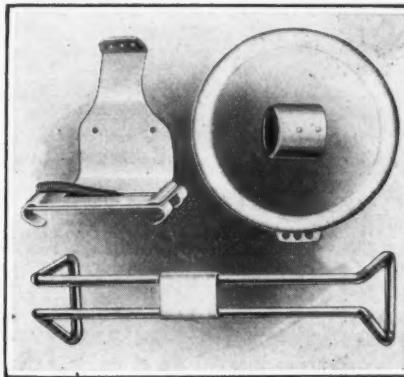
American manufacturers have sometimes been criticised for their tendency to increase the weight of storage-battery cap-lamp outfits in order either to increase the battery capacity or to render them more rugged. This is not true of the Koehler Manufacturing Co., of Marlboro, Mass., for, in making recent improvements to its Wheat electric mine lamps, this firm has appreciably decreased instead of increased the weight of the lamp outfit.

An extension of official Approval No. 17 covering these improvements has recently been granted by the U. S. Bureau of Mines. A letter from the Bureau under date of Jan. 12, 1925, reads in part as follows: "The substitution of the aluminum parts for the original steel parts is judged to be satisfactory. Therefore, Approval No. 17 is hereby extended to cover the use of the aluminum parts such as were used in the final tests, samples of which are on file with the Bureau."

The metal parts of this lamp outfit are now made of an aluminum alloy that is practically as strong as the steel formerly employed. Because of this change the weight of the complete lamp has been reduced from 4 lb. 12 oz. to 4 lb. 11 oz. This reduction in weight does not decrease in any way the quantity of light emitted by the lamp or affect the battery capacity in the least.

In the Wheat lamp, metal is utilized as a trimming. The bodies both of the battery case and lamp reflector (head piece) are made of a vulcanized insulating material that is as strong as cast aluminum but much lighter in weight.

The improvement made in this lamp consists exclusively in a change in the material employed, not in any alteration in design or shape of parts. In consequence, the weight of many thousands of these lamps already in use may be reduced materially by the substitution of the new metal parts for the steel ones originally supplied. As



Parts That Have Been Lightened

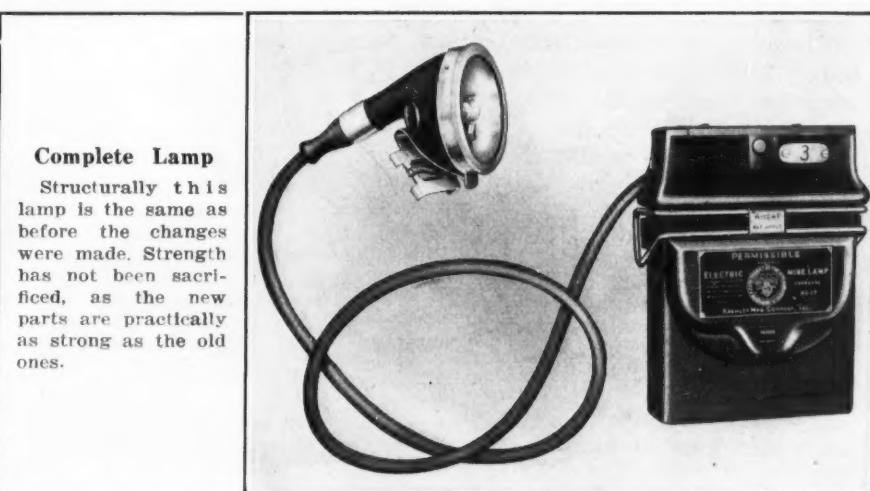
It was in the metal parts that decrease in weight was possible. These comprised the belt hanger, cap clip, lens holder and cable ferrule.

the size and shape of both old and new parts are identical the change from steel to aluminum alloy can readily be made by the man having custody of the lamp house or charging station. All lamps now manufactured by this company are being fitted with the new parts.

Small Starter Puts Motor On or Off Line

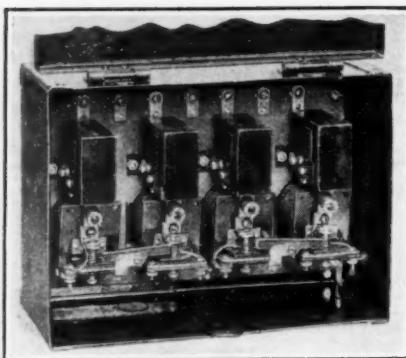
A new General Electric reversing starter has been designed particularly for monorail hoist service and accordingly has been made small and compact. Its use is also advocated for numerous other purposes where economy of space is essential, such as small motor-operated doors.

In operation, this starter throws the motor directly on the line. It may be used with either alternating- or direct-current motors, and consists of four single-pole contactors mechanically interlocked, mounted on a suitable base and inclosed in a small sheet-metal protective case for wall mounting. A push-button station is provided for operating the contactors, which are so arranged that the motor will run only



Complete Lamp

Structurally this lamp is the same as before the changes were made. Strength has not been sacrificed, as the new parts are practically as strong as the old ones.



Across-the-Line Type Starter

This outfit is made suitable for service on either alternating- or direct-current motors of less than 5 hp. capacity.

so long as the push button remains depressed.

For monorail-hoist or other intermittent duty, this starter may be used with alternating- or direct-current motors of ratings up to 5 hp. on voltages from 115 to 550.

The overall dimensions of the inclosed device are: Width, 14 in.; height, 9 in.; depth, 6 in. It is well constructed and so arranged that the cover may be locked shut if desired. Knockouts are provided for 1/2-in. conduit.

Jumper-Rail Clamp Has Only One Single Adjustment

The use of extension or jumper rails is all but universal practice in many coal regions. More or less difficulty, however, has always been experienced in holding these rails in place. The accompanying illustration shows a clamp recently put upon the market by the Central Frog & Switch Co., of Cincinnati, Ohio, intended to overcome this objection to the jumper rail and facilitate its use.

This device, which because of its effectiveness and ease of application has been named the Handy clamp, consists of one small forging. True, another piece is used in fastening the jumper rail in place but this is an ordinary track spike. In use the clamp is slipped over both track and extension rails and the two wedged firmly in place by the driving of this one spike. Withdrawal of the spike releases the jumper rail for adjustment or removal.

Wedged in Place

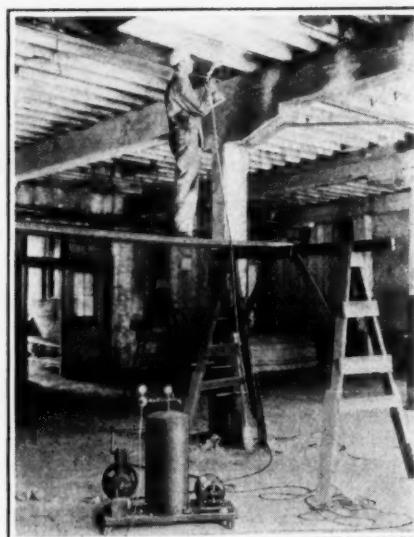
Driving an ordinary track spike through the clamp so that it bears against the outside flange of the track rail wedges the jumper firmly in place; removing this spike releases it. Such a spike is always available at any coal face.

This device possesses the cardinal advantages of being both simple and strong. Experience has shown that any mechanical appliance that is commercially adaptable to coal mining must be sufficiently rugged in construction to withstand the hard knocks and rough usage to which it inevitably will be subjected. This clamp has been tried out in several mines during the past few months and has given excellent results.

Air Brush for Painting

A paint spray brush has been placed on the market by the Simons Paint Spray Brush Co., Dayton, Ohio. It is claimed this device will paint or repaint almost every kind of surface rapidly and well. It can be fitted for gravity or compressor feed.

The electrically-driven air compres-



Air Paint Brush System

Quick work and excellent surfaces are produced with the aid of this brush gun and feed.

sor unit, is mounted on rubber-tired casters. The motor rests on a sliding base fitted with suitable adjusting screws. The brush, itself, is extremely light and is operated and controlled by a trigger which can be held easily in the open position. Machinery, walls or flat surfaces are painted by this spray with remarkable rapidity.

Publications Received

Proceedings of the Twenty-Seventh Annual Meeting of the American Society for Testing Materials. Vol. 24, issued in two parts. Part I has 1,173 pages and contains the annual reports of 35 of the standing committees of the society, together with the discussions thereon. Part II has 1,133 pages and contains forty-seven technical papers with discussion. The volume is illustrated and measures 6 x 9 in. The price of each part is: \$6 in paper, \$6.50 in cloth and \$8 in half-leather binding. American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa.

Washing Characteristics of Coal from the Thick Freeport Bed, Pennsylvania. by H. F. Yancey. Coal-mining investigations, under auspices of Carnegie Institute of Technology, U. S. Bureau of Mines and Advisory Board of Coal-Mine Operators and Engineers. Bulletin 16. Pp. 44; 6 x 9 in.; illustrated. Price, 30c. Carnegie Institute of Technology, Pittsburgh, Pa.

Fifth Standardization Bulletin. Standardization Division of the American Mining Congress, Washington, D. C. Pp. 148; 6 x 9 in. Proceedings of the Fifth National Standardization Conference, held in conjunction with the 27th Annual Convention of the American Mining Congress, Sept. 29 to Oct. 4, 1924.

Annual report on the Mines of the Province of Nova Scotia, 1924. by Ernest H. Armstrong, Minister of Public Works and Mines, Halifax, N. S. Pp. 351, 6 1/2 x 9 1/2 in.; illustrated.

Radio Publication No. 9. University of Pittsburgh, Pittsburgh, Pa. Pp. 40; 6 x 9 in. Price, 60c. A series of seven radio talks on science in industry. Discourses on iron and steel, natural gas, petroleum, coal and coke, glass and clay products are each followed by a selected bibliography relating to the particular subject.

Non-Carrier Radio Telephone Transmission, by Hugh A. Brown and Charles A. Keeler. Engineering Experiment Station, University of Illinois, Urbana, Ill. Bulletin No. 145. Pp. 26; 6 x 9 in.; illustrated. Price, 15c. Describes the fundamental principles of the non-carrier method of transmission and points out the advantages of this method over those in use at the present time.

Recent Patents

Mining Apparatus; 1,519,731. Morris P. Holmes, Claremont, N. H., assignor to Sullivan Machinery Co., Chicago, Ill. Dec. 16, 1924. Filed Aug. 4, 1922; serial No. 579,755.

Method of Producing a Solid Smokeless Fuel from Bituminous Coal and Lignite; 1,519,784. C. S. Lomax, Brooklyn, N. Y. and W. A. Grant, Birmingham, Ala., assignors to the Illinois Anthracite Corp., New York. Dec. 16, 1924. Filed Feb. 1, 1924; serial No. 689,857.

Mining Machine; 1,520,280. Charles E. Davis, Chicago, Ill., assignor to Goodman Mfg. Co., Chicago, Ill. Dec. 23, 1924. Filed April 17, 1920; serial No. 374,746.

Moisture Reducing Plant for Coal Washeries; 1,520,410. Antoine France, Liege, Belgium. Dec. 23, 1924. Filed March 8, 1924; serial No. 697,891.

Safety Appliance for Mining Machines; 1,521,023. Morris P. Holmes, Claremont, N. H., assignor to Sullivan Machinery Co., Chicago, Ill. Dec. 30, 1924. Filed June 11, 1921; serial No. 476,756.

Clutch for a Mining Machine; 1,521,023. Morris P. Holmes, Claremont, N. H., assignor to Sullivan Machinery Co., Chicago, Ill. Dec. 30, 1924. Filed May 1, 1922; serial No. 557,660.

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